

American Gas *Association* MONTHLY

Postwar Customer Relations

•

Industrial Gas Reconversion

•

Appliances in High Altitudes

•

Coal Production and Quality

•

Venting of Gas Water Heaters

September



1944

VOLUME XXVI NUMBER 9



Any morning brother Dave
Can have hot water for his shave!



DOESN'T IT GIVE you a "lift" to think about the wonderful things you'll have in your Gas-equipped home of tomorrow? Hot water, for instance. Thanks to your new automatic Gas water heating system, you'll have a "hot spring" on tap every hour of the day!

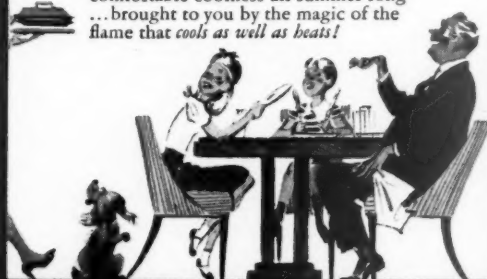
Now Mom's meals are all sublime
With half the work and half the time!


LOOK FORWARD to a new kind of kitchen...cooler, cleaner than you ever dreamed possible. To a new Certified Performance Gas range with such amazing fingertip controls it makes all your cooking easier. To a new Gas refrigerator—silent, trouble-free—that keeps more foods fresh longer!



No fuel to order...No fuel to store
The heat comes on...You worry no more!

DREAM UP YOUR CLIMATE...and your new Gas air-conditioning unit will do the rest. You can have balmy warmth in January, comfortable coolness all summer long...brought to you by the magic of the flame that *cools as well as heats!*



...This is the house that Gas  runs!

IT'S ON ITS WAY to you... the house that's the last word in comfort and convenience... the house that Gas runs! Today, in the great laboratories of the Gas industry, engineers are searching, testing, developing, perfecting the ways in which the tiny blue Gas flame can best serve you.

TOMORROW, this flame will help make your house easier to manage, more fun to live in than any house you ever hoped for! Speed that day by conserving Gas for war production and investing in the future with every War Bond you can buy. **AMERICAN GAS ASSOCIATION**

GAS

THE MAGIC FLAME THAT WILL
BRIGHTEN YOUR FUTURE



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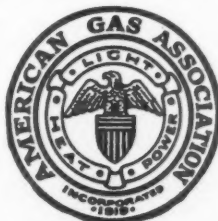


Instead of the leading story covering highlights of the convention program, a customary September feature, this issue carries the somewhat startling news that that ancient and honorable institution—the convention—is a war casualty. It's the first time in the history of the Association that there will be no convention—even of the fore-shortened variety held since the war. . . . There will be a meeting but it is strictly a formality dictated by by-laws and will in no sense be dignified by a speaking program. . . . Gas men are extremely gregarious and there are many vital problems to be discussed, particularly postwar research and promotion. While the MONTHLY and gas trade press can do much to carry the facts of these programs to the industry, they cannot replace the face-to-face meetings nor round-table discussions which are many times the most fruitful parts of conventions. . . . It is a fine tribute to our leaders that they can readily subordinate their desires and the industry's needs to the greater cause. As ODT gratefully acknowledged: "You have made a very worthwhile contribution to the wartime transportation problems of the carriers, the military and the public."

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View of the yard mains of the West End gas plant of the Public Service Electric and Gas Company of New Jersey. These mains carry gas from the storage holders to the compressors.



JAMES M. BEALL, *Editor*

1944 ANNUAL CONVENTION CANCELLED

BY vote of the Executive Board, the American Gas Association's 1944 annual convention, scheduled for October 5 and 6 in Chicago, has been cancelled. As a result of a communication from the Office of Defense Transportation pointing out the seriousness of the war transportation situation and asking that such meetings be postponed, the directors of the Association decided that, notwithstanding the urgency of industry research and promotional plans which it had been hoped to develop in Chicago, full cooperation in this phase of the war effort would be immediately pledged and ODT has been notified accordingly.

In compliance with the Constitution of the Association and with the membership corporation laws of New York, an annual meeting of an hour or two will be held without speaking program and for the transaction of routine business, such as election of officers. This meeting will be held Thursday, October 5, at the Engineering Societies Building, 29 West 39th Street, New York, N. Y.

The appeal from the Office of Defense Transportation, dated August 11, 1944, and addressed to "Executives of Convention-Holding Organizations" follows:

"The necessity for a further curtailment of convention travel becomes increasingly evident. It has been emphasized by the invasion of Western Europe and the resultant increased demands upon the transportation facilities of the country. Passenger travel by rail and bus—troop movements, furlough travel, and vital war production transportation—continues to establish all-time records.

"There is considerable evidence of a growing public sentiment favoring the elimination of conventions for the duration. Recently, we wrote to the executives of fifteen hundred of the country's largest industrial concerns, asking their cooperation in our general campaign for travel curtailment. In their replies, many of these leaders of industry displayed a very critical attitude toward the holding of conventions during the war period. Our convention curtailment program is also receiving editorial support from the country's newspapers. Our mail contains letters from a wide cross-section of the general public directing criticism toward a particular convention or toward conventions in general.

"This public attitude is understandable when we consider that convention travel is particularly conspicuous and concentrated. It blankets the transportation and hotel facilities of the convention city, thereby seriously impeding the essential military and commercial traveler.

"The Office of Defense Transportation, therefore, asks that your organization, if it has a meeting, trade show, convention, or gathering of any sort whatever planned during the remaining months of 1944, cancel that meeting in the interest of wartime transportation. We ask this action on your part even at the sacrifice of your organization's need for wartime conference and postwar planning.

"May I have your assurance that your organization will join the many groups who have already cooperated by cancelling any convention or meeting scheduled for 1944?"

Customer Relations During the Postwar Period



H. Carl Wolf

OUR customer relations in the postwar world will depend, in my opinion, on six general factors: First, what our individual company has done up to this time; second, what it is doing right now;

third, how and what it plans now for the future; fourth, what the gas industry has done, is doing and does do; fifth, what industry, as a whole, does now and in the postwar world; and last, and most important, what each company does about its own customer relations when peace comes again.

"Gas Alley" to "Main Street"

What is done is done, but a quick look backward might help us better to appraise the future. The gas industry has moved a long way from "gas alley" along the road to "main street." "The public be damned" is a museum phrase. We have actually assumed the initiative and have brought our five billion dollar industry into bold relief against a generally recognized back drop of civic responsibility, service consciousness, human employee relations and generally satisfactory customer relations. We have not been firmly associated in the public mind with the appellation "trust," and we have not been marked for public wrath and political harranguing. On the other hand, our management has not had the enthusiastic backing which it should have had, because the owners of our properties are still too far removed from them to have their fortunes linked indissolubly with the industry.

Address before Pennsylvania Gas Association's Annual Meeting, May 2, 1944.

By H. CARL WOLF

*President, Atlanta Gas Light Co.,
Atlanta, Ga.*

*Chairman, A. G. A. Committee on
National Advertising*

What we are doing today is extremely important and if it is not properly oriented we still have time to correct it. Beset with manpower and material shortages, hemmed in by regulations and restrictions and yet serving the greatest amount of business ever on our lines (even though not at high profit), are we tempted to emulate some other industries by ceasing our public and customer contacts, restricting our service, eliminating advertising and all sales approaches, antagonizing our customers with needless regulations and heedless handling and generally tending to go our way, and trying to make our customers like it? There is not one of us, of course, who would not be loath to admit that he has fallen into these errors, but it might be well to scan closely our practices and policies.

Must Tell Public Our Story

Our customers have a right to expect orderly, businesslike relations with us, and where regulations, restrictions and shortages interfere with those relations they have a right to know why and for how long. We have a valuable asset in our superior fuel, as well as in our record of low rates and non-profiteering practices. These assets can be turned to good advantage in the postwar world if they are topped with sympathetic, understanding service, even though it be limited. And both can be magnified in value if we tell the public right now our story through advertising.

If, individually and as an industry,

we could convince ourselves that our practices and policies in the past and at present were and are businesslike, progressive and adapted to a high plane of prestige and accomplishment after the war, we still might drift into oblivion and bankruptcy if we do not plan well and determinedly and soon for our business in the postwar world.

Postwar Horizons

I like to think of the postwar world as one of opportunity, the breadth of which will depend on the soundness of our planning. What we have done in the past must not be a guidon behind which we are content to march blindly across the threshold into tomorrow, but rather should it be a foundation of experience and training by means of which we can strengthen our judgment for the future. We have a big industry and, to each of us, his company is a big thing. But look back ten, twenty or thirty years and we might smile at our size, our methods and even the materials we used then. In too many ways we insist on slavish adherence to methods, materials and policies of the past, simply because too little inspired thinking has been done along new lines. Let me throw down this challenge to you as I have to the Postwar Planning Committee of my own company.

Suppose, in your imagination, there exists across the road a community of like size, tenor and outlook to the one you are now serving—everything the same except that no inhabitant has gas service. Then look forward ten, twenty or thirty years and imagine that, with good dependable gas service, proper rates and inspiring policies, that community, in its willingness and ability to use your service, has doubled. Now design a gas system to serve that

community, build it, sell the inhabitants and institute policies that will keep them sold. Keep in mind the marvelous new developments in materials, methods of construction and new uses of gas; and think of your competition.

Perhaps the heavy mains, thick enough to postpone the day of complete corrosion, the unsightly meters, the manufacturing plants that recover perhaps 75% of the heat units in the gas making fuels, the appliances that utilize only a portion of those reduced heat units and that are so heavy as to require a squad of men to lift them, can give way to new materials, improved methods, more efficient plants and streamlined appliances, so improved in first cost and operating costs as to shorten the economic route from the company fuel pile to the customer's fuel demands.

Citizens of the World

Remember in this new community are people who have found new horizons, acquired new habits, greater independence, enlarged experience. No longer are they a colloquialized group—they are now citizens of the world. Remember, too, that while the gas industry has been trickling out a few dollars in advertising, our competitors have been pouring out millions of dollars for printed and spoken words and have had their emissaries at every turn to make these inhabitants believe that they can live more carefree, happier, cheaper, dreamier lives if they forget gas and turn to these other fuels. Consider this: These inhabitants might not be so willing to accept many of the policies and practices we now pursue.

Please don't misunderstand me, I

am not saying that a single thing we do, the materials we use or the policies we pursue should be changed. I only emphasize that every one of them should be reviewed, analyzed and tested in the crucible of 1944, with our eyes on 194X. In that critical study let's not allow the practices of the past to blind us to the limitless possibilities of the future.

The fourth factor—what the gas industry has done, is doing and will do—need be touched on only lightly here. Suffice it to say that this industry, having made great progress, must continue along aggressive, progressive lines if it is to maintain its place in the peace parade. We must meet together with greater enthusiasm, imagination and even monetary contributions to solve the problems ahead. More and more and better and broader research. More and more advertising. Preparedness to meet attacks from without—enthusiasm to advance from within. The skeptics, the critics, the detractors, the obstructionists, the do-nothings must give way, and the imaginative, creative and aggressive doers be given opportunity. We must resolve to act as an industry if we are to advance as an industry. And, in this, is a challenge for every unit, every individual in the industry.

Gas and Other Business

The impingement on the gas industry of the acts and practices of business and industry generally can be stupendous. If private business plans now and effects a strong, healthy, competitive private enterprise, free from crippling Governmental inhibitions and restrictions, the gas industry will profit; but if

business men are lackadaisical, confused and non-aggressive, we may well witness a gradual strangulation of private initiative, the ascendancy of Government and finally a capitalistic state inimical to the precepts of our forefathers. Without question, there must be a high level of public employment after the war. And there must be opportunity and encouragement for private, progressive employment so that men can produce more and better products, in greater quantities, to be sold at lower prices, for greater service to our people. There must be a resolve to do, and plans made now for such things.

CED Commended

I commend to you the activities and principles of the Committee for Economic Development, a private organization of business leaders, of which you have heard much and will hear more. This organization is concerning itself with the basic problems of our postwar competitive system and has evolved an exemplary plan by which every business man can have a part. We, of the gas industry, with our large investments and our dedication to the doctrine of service, have a great stake in this future and hence a real urge to do something about it. C.E.D., among other things, is making available the results of its outstanding research in the realm of postwar business atmosphere, armed with which as a factual background, every individual business man, working in his own orbit and in his own way, can start a ripple of influence that can easily expand to a tidal wave of business influence.

Now, if we have looked back and taken the best; if we have reoriented the present and planned for the future; if the gas industry, as a whole, has built itself strong, aggressive and serviceable; and if business generally has taken the initiative, developed leadership and created a healthy business atmosphere, the last factor in this chain—what you yourself do about your customer relations in future peace years—ought to be comparatively easy. If these other things have been done properly and positively, you will have full cognizance of the powerful competition you will have to meet. You will have weeded

Let's be Practical!

The National Association of Home Builders believes the public has been oversold on postwar wonders in the residential building field. The house which by pushing a button can be moved from the city to the mountains or sea-shore for a weekend and rearranged to suit the environment will positively not be ready six months after the war. Neither will the house in which electronics will replace both the brain and muscle of its languid inhabitants. Furthermore these houses or any like them will not be offered for \$500 down and \$50 a month.

Getting down to the gas industry's part in the modern home, we can promise long-lived, economical, carefree appliances and service with just as much automatic operation as the buyer can use or afford. No other industry can legitimately offer more, and probably not nearly as much.

P.C.G.A. News Letter

out obsolete practices and policies. You will be prepared to aggressively sell and service, and you will feel your full responsibility to maintain a strong American industrial machine. You will work for the best interests of your security owners and your employees as well. You will work for the best interests of your customers, on whom we all rely for our pay checks.

Yes, you will work! And, as you

work, you will plan; and as you work and plan you will come to full realization that good customer relations are, after all, not a problem separate and apart from your manifold other problems; not something you can draw a chart of today and then forget; not something to cause loss of sleep and energy, but just an integral part of a big, pleasant, vital game—the game of American business—in this case, the gas business.

other account on our books—they were important people to us. The fact that we have a market for the entire supply of our product today makes these individuals no less important. We must continue to treat the individual with unrationed courtesy if we expect to have him as our customer after the war, when lifting of restrictions will permit him to trade where he pleases.

"Being composed of some 2500 individuals, it is natural to assume that we in The Gas Company have made some mistakes, but we're spending a lot of time trying to lick these problems. Employees are showing enthusiastic cooperation. They understand that your business makes our business that makes their job. We've promised ourselves that, in dealing with you, we will not remind or infer the thing that all have learned through heartrending experiences—that there's a war on."

Courtesy Is Not Rationed

UNDER the above title, The Ohio Fuel Gas Company, Columbus, during the week of August 20, carried a large newspaper advertisement which must have struck a responsive chord in many hearts. Attacking that oft-repeated excuse for careless service, "There's a War On," it reminds itself and other institutions that customers "are keeping a mental journal" of war treatment for postwar accounting. The copy is noteworthy:

"What individual or firm has not been guilty on occasion of using the war as an excuse for declining a request that could have been met easily with the proper attention? All of us have felt the restrictions of war in varying degrees but there comes a time when we must learn to live under those restrictions—to do the best job with what we have available. Are we aware that customers are keeping a mental journal—making credit and debit entries of the firms with whom it still is a pleasure to deal as well as those who slight the customer?"

"Merchandise is scarce, often unobtainable. Are we sure it cannot be had before informing the customer? Do we suggest a suitable substitute or the best means of prolonging the life of goods the customer has for the duration?"

"Manpower is scarce and inexperienced help has been employed. But after a reasonable period we learn to do the job with fewer personnel, and 'green' help becomes trained under continual guidance of supervisors. Is the help problem used as an excuse for lack of supervision?"

"All business is governed by rules, both self-imposed and by law. Do we too often use the rule as an excuse for a refusal rather than give the customer every advantage in its interpretation? Do we take time to give the reason for the rule rather than abruptly apply the rule itself? Are we remembering that people like to be treated as individuals?"

"Do we consider that a customer's complaint is important to him or he wouldn't have raised it? A seemingly unreasonable

request to us may appear justified to the customer because he lacks some of the facts we know about our business. Do we reply with a quick, 'No,' or do we have the patience to explain the facts? Can we forget that in the past so many suggestions for improving the service—for setting new rules—came from the customers themselves?"

"Some people are prospering as a result of the war while many actually are pinched to make ends meet. Do we let the fact that some may look upon money lightly cause us to be unsympathetic to those suffering economic reverses? In closing our offices at night, do we hold the door for the last one to get in, or do we win the race and lose the customer?"

"Before the war we were grateful individually to the Jones, the Smiths, the Everybodies for their share in making our business possible. They were not just an-

John A. Little Dies

JOHN A. LITTLE, comptroller, Welsbach Engineering and Management Corporation, died at his home in Philadelphia, July 27, after a prolonged illness. He was 54 years old.

Mr. Little joined the Welsbach organization as an office boy in 1906, and except for nearly two years' service in the army during the First World War, including active service in France, his employment was uninterrupted with the Welsbach Engineering and Management Corporation and its subsidiary companies, such as Kitson Company, Ozone Processes, Inc., and Welsbach Street Lighting Company.

Mr. Little was elected assistant secretary of the group in 1940, and became comptroller in 1941.

Gas Ranges More Durable

Electric ranges get out of order three times as fast as gas ranges, it has just been revealed in an official nationwide survey made by the Office of Civilian Requirements, War Production Board.

The study covers a wartime period during which replacement parts and service facilities for both types of ranges have become progressively scarcer. It is shown that three per cent of electric ranges on the lines have gone out of commission while only one per cent of the gas ranges have become unusable.

Although 20,305,080 gas ranges are shown to have been in use as compared with 3,542,944 electric ranges, only 203,051 gas models are reported as casualties as against 106,237 electric stoves.

The comparison becomes even more significant when a further study of the survey reveals that a relatively larger portion of the gas ranges covered in the analysis are more than five years old and on that basis might reasonably have been expected to give trouble more quickly than newer models of either type.

The government survey also shows that the gas industry made good progress in recent pre-war years in replacing older or obsolete models with modern gas ranges. Of the 20,305,080 gas ranges listed in the compilation, 32.3 per cent were shown to be five years old or less.

In addition to gas ranges, appliances registering only one per cent casualties included gas and electric water heaters, with 9,492,416 of the former in use as against 1,203,264 of the latter. Gas heating stoves were also in the one per cent class.



ABOUT RE-CONVERSION

MANY, if not most, of our industrial gas customers in this war period have radically changed the products they made and their manufacturing processes.

The maker of steel auto body strip is now rolling out ship plate in enormous amounts; the builder of jail cells heat treats armor plate; the maker of automobiles produces anti-aircraft guns; and the bridge builder now is constructing ships. These are only a few of a myriad cases that, in the main, are similar. Plants have been redesigned and the equipment in them has been replaced with new, in order to do just one thing—to make materials and instruments of war.

You are all familiar with what a complicated and costly process this was, and with the mistakes that were made in the rush and excitement of the conversion.

One of these days the makers of materials and instruments of war must retrace their steps and set up to make again the things that they made before, or new things that they believe will be more easily made or sold. The boys will again be beating swords into plowshares.

As you all know, the thinking along these lines already has considerably more than commenced. Much of it has gone a long way past a start, and I suppose that every one of our industrial gas customers has made at least mental plans as to what he is going to do after the war. Some of them, we know, are even now setting up very elaborate plans toward this end, and in the near future, all of our indus-

With the time of reconversion rapidly approaching, the gas industry must make every effort to be prepared for drastic industrial changes. This paper by Mr. Emmerling, presented five months ago at the 1944 A. G. A. War Conference on Industrial and Commercial Gas, is of even more significance today than when it was first presented. It makes a number of valuable suggestions which deserve immediate attention.

By **KARL EMMERLING**

Assistant Superintendent, The East Ohio Gas Co., Cleveland, Ohio

trial customers will, of necessity, commence making very concrete and definite plans as to what they propose to do when the war ends.

These plans fall naturally into three classes, as illustrated by what we find our users of industrial gas are planning to do. The three main divisions of planning are:

1. Continue manufacturing the articles that they are now making.
2. Return to their prewar business, or
3. Enter into an entirely new line of endeavor.

These courses of planning or thinking often overlap, even to the extent of including all three phases of post-war production, or the possibility of them, at least. The only thing that's certain these days is uncertainty.

But no matter what the plans are,

or may become, the average industrial gas customer will have to rehabilitate old idle equipment, devise new ways of using equipment presently used in war production, or purchase new equipment.

Our problem in this whole picture is to see that the customer, if he needs fuel at all, uses gas regardless of what changes may be necessary in equipment. We can at least begin to chart that problem, now.

During this war period, many of us may have lost track of the many changes that have taken place in the plants of our customers. This is only natural; it has become very difficult to get into plants, plant executives have been too busy to see us, the depleted manpower of our industrial departments has had all that it could do to take care of the immediate needs of its customers.

It is time that we bring ourselves up to date on what has happened in our industrial customers' plants, and, most important of all, on what they are thinking about for after the war, and make our plans accordingly. We must determine how we are going to retain the industrial load that we now have, regain our prewar load, and get new load if the conditions indicate that new load is to be had.

What must we do to accomplish this?

First and foremost, we must build up our industrial departments *now*. We cannot wait until men return from the service, or until men who have been transferred to other departments can be conveniently released. Some way

or other, we must get enough men for our industrial departments to do the preliminary work that must be done ahead of an active campaign to regain business lost during the war, hold what we gained during the war, and get our share of what new business will be available after the war.

After having obtained the necessary men, the next job is to train them sufficiently so that they will be capable of carrying on the work which will be demanded of our industrial departments. A course of retraining for the men who remained in industrial gas work since before the war, or who have entered this line of endeavor since the war started, might not be amiss. We have been doing no selling to speak of in recent years, but have merely been accepting such industrial gas business as the War Production Board has felt would further the war effort. Many of us may have to learn to sell all over again.

Aid To Customers

Then, after rebuilding and retraining our industrial departments, we can approach our customers and attempt to learn what their reconversion plans are and offer our aid in carrying them out, by—

First, fitting fuel burning equipment now in use into the reconversion plans. We may find it necessary to rebuild conveyor mechanisms, change burners, controls, et cetera, on gas-burning equipment. Also, much of the equipment selected and installed during the hurly-burly of the conversion is now being fired with fuels other than gas, both to the detriment of the product and with production costs higher than they need be. We shall find that much of this imperfect and uneconomical equipment can be converted readily and at a reasonable expense. Our golden opportunity for getting this done will be during the reconversion period.

Second, we can make industrial sales progress now by redesigning and reconditioning idle equipment, for use on new products or for better use in making the prewar products. As you well know, there were many furnaces in use before the war that could well have been rebuilt, insulated, equipped with modern burners and controls, but were permitted to oper-

ate in a broken-down condition for one reason or another. Now, if their return to service is contemplated, the time for such overhauls may be ripe. Here again there will be many opportunities for converting from other fuels to gas.

Third, we can guide and assist post-war planning, for mutual advantage, by selecting new gas burning equipment, either for old manufacturing processes that are to be revived, or for the new ones that will replace them. There may be more of this contemplated than we imagine at the present time.

Knowing what our customers' plans are, and having sold our industrial customers on our ability to assist in carrying them out, we must determine what furnace and other fuel-using equipment will be required for reconversion. Before we can intelligently attack any reconversion problem, we must know:

1. What idle furnace equipment is available in our customers' plants, what sort of shape it is in, what fuel it is designed for, and if it is complete or if it has been robbed for repair parts.
2. What furnace equipment is now in use, what it is being used for, its fuel, its condition, and whether or not it can readily be converted to gas, if using a fuel other than gas.
3. The condition of the gas distribution system in the plant, and what will be necessary to put it into shape for peacetime operation, when economy will again mean something.

Action After Plant Surveys

In order to determine this, we must bring our plant surveys up to date.

After we once know what the customer is planning, where gas will fit into his plans, and what equipment is available and what will have to be acquired, it then should be our job to develop for him plans, as nearly complete as possible, for the reconversion of his fuel-burning equipment and distribution system.

We must bear in mind always that if we do not get into the picture at this time, it may be a long time before we get another chance. We must, therefore, leave no stone unturned in our own efforts to secure the business

of the future. Neither can we afford to overlook any opportunity for taking advantage of outside assistance in attaining the goal we are after.

Now that the plant expansion program is drawing to an end, the gas furnace manufacturers are finding their business backlog dwindling away. They may find themselves with expanded plant facilities and without business on anything like a commensurate scale. Unless these manufacturers can find enough work to keep at least a skeleton organization going, they will have to shut down and perhaps go out of business. Any trend in that direction will be a dangerous one for the gas industry as a whole, and all possible steps should be taken to avoid it. Therefore, in working up conversion plans, the proper manufacturers should be called in, and they should be assisted in developing business in redesigning, rebuilding and repairing old equipment, as well as in the construction of proposed new equipment. It may even be possible, with our assistance, for them to act as paid reconversion consultants on fuel matters.

Cooperate with Manufacturers

During the period of wartime expansion and development, the manufacturers of industrial gas equipment have done wonders in development work, not only in furnace and burner design, but also in the use of controlled atmospheres; and in the application of gas-heating processes. The greatest benefit possible from this work can only be had if we work with our manufacturers, and assist them in tiding themselves over the dull period that is sure to come before reconversion commences.

As a result of wartime expansion of pipe lines, production and supply, many natural gas companies will find themselves confronted with the necessity of keeping their sales and load factor at a high point. This can be done in part, at least, by keeping industrial sales up, perhaps not at the present wartime levels, but higher than they were in the more or less normal prewar years. This simply means that in addition to recovering the prewar business and holding that portion of the wartime business that remains, it may become necessary to look around

for additional load in rather large quantities.

There are many places where opportunities of obtaining more load exist.

The steel plants still use large quantities of producer gas and fuel oil, much of which can be replaced if the equipment using this fuel is redesigned and rebuilt for natural gas firing. Included are soaking pits, continuous heating furnaces, large heat-treating furnaces, et cetera.

Opportunities for More Gas Load

One of the really large sources of potential business for natural gas is the hundreds of open hearth furnaces in use in the steel industry. Natural gas has never made too much headway here, and I still feel that in properly designed furnaces it can successfully compete with fuel oil, both in cost and speed. The latter has always been a stumbling block to natural gas. A nationwide survey of methods of utilizing natural gas in open hearth furnaces is well worthy of consideration by the natural gas industry. From such a survey, one might be able to develop a method of using natural gas that would really compete with oil. A survey of this type might be undertaken in cooperation with the Open Hearth Section of the American Institute of Mining and Metallurgical Engineers.

The heavy ceramic industry, including the brick and tile, the glass, and the cement industries, should still furnish ample opportunity for expanding the natural gas load.

In many areas, where coal and oil are relatively high in cost, power boilers will present an attractive possibility for adding load, particularly if a dump gas arrangement can be worked out.

The list of opportunities for extending our load after the war is endless and could be extended indefinitely if one cared to. I am sure of this—everyone of us has plenty of opportunities on his system of acquiring new load after the war. We must determine what they are, and when the time arrives, we must then take advantage of them.

In all our planning, there is one thing that we must not lose sight of. Our competitors are also making plans

toward the same ends that we are or should be doing. It behooves us to keep an eye on them and to determine, as far as possible, what they are thinking about and to take measures to counter their planning.

In the last year or two, some of our natural gas customers were induced to install standby fuel, in order that vital war production might continue during periods of gas shortage. Some of these standby customers may have to be re-educated after the war on the advantages of natural gas, particularly if competitive fuel prices are reduced to a point that makes the use of oil, coal, or butane seem attractive.

The type of new load that may be available for a natural gas utility de-

pends, in the main, on the prices of competitive fuels and the rates at which natural gas may be sold. Natural gas will replace mainly coal and oil, and the prices of these two fuels will be the basis from which we can determine what business we can hope to obtain at certain gas rates. Also, and highly important, they will be a guide in setting up rates that will compete.

I am probably stating what everyone knows when I say that in setting up rates to obtain business, we must not lose sight of the use value of natural gas, which will permit rates that are much higher per million B.t.u. than are the costs of coal and oil.

Gas Industry's Postwar Planning Wins Commendation



A. M. Beebe

A FINE tribute to the work of the A. G. A. Postwar Planning Committee, A. M. Beebe, chairman, appeared in the July 7 issue of *Printers' Ink*, nationally-known advertising publication. Citing the results of a survey, it is pointed out that only five associations have done

anything of a tangible nature in postwar planning, and among these five is the American Gas Association.

Considerable space is devoted to the 31 conclusions and recommendations of the postwar committee as listed in its Report No. 3, and it is emphasized that this program is "designed to aid the gas industry to become the aggressor in important competitive postwar markets." The article states that a "committee of action" composed of 20 leading gas utility executives in various sections of the country, has been appointed to implement the objectives which are summarized as follows:

"The committee estimates the postwar market at about 8 million gas ranges to replace old equipment now in use and at least 650,000 ranges per year for newly constructed residences. In addition, 5 million automatic gas water heaters will be needed and there is a market for 2 million gas refrigerators.

"An adequate and properly trained sales

force will be needed to realize fully the potential market for gas fuel and gas appliances, the report points out. Gas utility companies, it adds, are responsible for the promotion of gas appliances and equipment, whether they do direct merchandising, merchandising through dealers, or a combination of both.

"An inter industry committee has been formed with the Edison Electric Institute to promote the use of both gas and electricity in the home of tomorrow.

"The Gas Association also recommends that utilities give manufacturers orders of a 'backlog' nature to encourage them in the conversion period and assure them of an outlet for their products during the period immediately after the war. Other specific recommendations are:

"Each utility should support the national advertising program of the American Gas Association and lay plans to broaden still further its effectiveness.

"Advertising must concentrate on the use of gas in the kitchen.

"Sales, appliance development, and promotional activities of the industry should be coordinated both by the utilities and manufacturers.

"Service programs of utilities should consider and support dealer activity."

An outline of the gas industry's postwar planning organization also appeared in a directory of "Postwar Planning in the United States," recently published by The Twentieth Century Fund. This directory lists 197 national organizations engaged in research and education of general public interest in this field.



Portland Goes All Out for Postwar CP Range

WHAT is the right time to start advertising the CP gas range for postwar competitive markets? Two years—one year—six months before the war's end? Or should we wait until the CP range again is in production and available on sales floors (when all of our pre-war CP promotion long ago will have been forgotten by the public)?

Another question just about as difficult to answer—what *kind* of advertising is there that would make sense and be interestingly readable in these days when there are no CP ranges to sell?

The essential facts are two. First, we can offer the public a range with *every* advantage of modern cookery—self-lighting burners with *controllable* heat—smokeless broiler—precision oven with automatic heat control—super insulation to keep the heat *in* the oven and *out* of the kitchen—a range that will cook every meal to perfection and give the housewife hours of leisure.

If it were not for the second essential fact we could say, "What more do we need to carry on the biggest promotional job in the history of the industry?" But the second fact is the plain truth that not enough housewives know that their "Dream Kitchen of Tomorrow" is to be built around a new, streamlined postwar CP gas

range—or at least that the gas utilities and the gas range manufacturers are not keeping their future customers' minds on it.

Out in Portland, Oregon, Portland Gas & Coke Company decided to start its postwar promotional campaign right now. The executives felt, according to R. G. Barnett, vice-president and general manager, that the indeterminate time when CP ranges again will be in production is a minor consideration compared with the primary job of keeping housewives and husbands *continually* interested in what the industry's postwar engineering will bring into their kitchens.

Creating Public Appetite

With that decision definitely made, the problem of creating public appetite for the improved CP range available after victory began to departmentalize itself into several objectives. First, it had to be made plain that a better-than-ever range is being planned by the researchers, designers and engineers *NOW*. Second, the new range had to be illustrated attractively, suggestively—and yet with ample leeway so the individual's imagination could supply certain details. Third, the layouts, illustrations and general composition of the advertisements had to supply an atmosphere of lively style

and modernity. And fourth, the newspaper advertising campaign had to make a bold bid for attention by means of size, frequency, consistency and the use of supplementary mediums. The result was the adoption of the largest, longest and most intensive campaign of gas range promotion ever undertaken by the company.

The accompanying reproductions of the first few newspaper advertisements do not display them to full advantage because the originals, as they appear in the Portland Sunday newspaper magazine sections, are in black and two colors, and are of half-page newspaper size. The blueprint used as a background theme appears in blue, and the standardized question-mark is in red, in every advertisement.

The Portland company's mains extend from Portland through a large section of the Willamette Valley, serving a number of cities and towns in that region and the neighboring city of Vancouver, Washington. All daily and weekly newspapers in the service territory also are included in the advertising schedule.

Supporting the newspaper advertising on a scale that amounts to sizable independent advertising campaigns, Portland Gas & Coke Company has contracted for a new three-times-weekly radio program, "Songs of Good

Cheer," in addition to continuing the "Mystery Chef" and tying in locally with Servel's "Fashions in Rations," a full showing of car cards in all street-cars and busses, and a 50% showing of 24-sheet outdoor posters in Portland and all the tributary cities and towns.

The radio program, featuring old and new song favorites, carries strong CP copy. Here is a couple of typical "commercials":

At this time of day, you are probably beginning preparations for dinner. Portland Gas & Coke Company asks what about your range? Is it one you are proud to have in your kitchen? One you are happy to work with? Does it save time and work in meal preparation, or does it make extra work for you by having to be watched constantly? Right now, of course, there isn't much to be done by way of replacing your range with a new one. But thousands of housewives will be glad to know that big plans are in the making for new, modern, beautiful gas ranges after the war is won. Just picture *your* kitchen with a new CP Gas Range . . . so white it fairly sparkles . . . so smooth in line it will be easy to keep clean and new-looking . . . so perfect in performance every meal will be a delight to you and your family.

New conveniences? Yes, indeed! Even now, while the gas appliance manufacturers are engaged in war production, they're thinking ahead to peacetime and the needs of *your* kitchen. And they're thinking also in terms of employment for thousands of returning service men and women to keep the production lines humming.

CP means Certified Performance . . . a symbol of distinction on *better* gas ranges which will be made again by several high grade gas range manufacturers as soon as the war is over.

Until these fine CP Gas Ranges are again available, Portland Gas & Coke Company urges you to continue with your purchases of war bonds.

Portland Gas & Coke Company asks if you are doing any long-range planning now . . . for a new home, or for improvements in your present home after the war. If you are, it's a good guess that you'll want to start with the kitchen. And that means, of course, that one of your very first peacetime purchases will be a beautiful new CP Gas Range. CP means Certified Performance, and it also means that every gas range bearing that seal is designed to comply with the highest standards of manufacture.

The tiny blue gas flame will have greater-than-ever powers of magic in the new peacetime CP ranges, for plans are in the making now for new designs of greater beauty, new conveniences for greater performance and cooking perfection. With a new CP Gas Range, cooking will become a pleasure instead of a chore. You'll have added hours of leisure away from the kitchen because your range will perform as you want it to, without constant watching or peeking.

Yes, ladies, after war production is finished, and the war is won, the CP Gas Range of your choice will be available, and the minute you see it you'll know it is one of your favorite dreams come true.

Portland Gas & Coke Company suggests that one way to insure owning a

beautiful new CP Gas Range in peacetime is through your regular purchases of war bonds now.

In response to A. G. A. MONTHLY's request for information about the campaign, Mr. Barnett has added these significant figures. "According to our advertising agency, McCann-Erickson," he writes, "the 39 newspapers in which our advertisements appear will publish a total of 11,250,000 CP messages in the course of a year; our radio audience will actually listen about 3,000,000 times to our three radio shows; we will have 81,750,000 exposures of streetcar and bus cards, and the audited traffic passing our outdoor posters amounts to 46,400,000 a year.

"As big as these figures seem to be, we feel that we are doing no more than a necessary well-rounded job of keeping the CP range steadily before our customers until the time comes when they can buy one. We believe it is imperative that gas companies throughout the country do an 'all-out' local advertising job *now* to supplement, but by no means to supplant, the outstanding national advertising job being done by the American Gas Association—in fact, we also feel that the national campaign should be augmented to several times its present size. In other words, NOW is the time for an aggressive 'promotional campaign.'"



PLANNING YOUR "TOMORROW" TODAY!

When the time of war is over, be sure to plan for the future. The Portland Gas & Coke Company is now planning for the future. The new CP Gas Range is being designed for the future. It will be a beautiful, modern, and efficient range. It will be a range that you can be proud to have in your kitchen. It will be a range that will make your life easier and more enjoyable. It will be a range that will be a true investment for the future.

PORTLAND GAS & COKE COMPANY
ONE FOUR BROADWAY, NEW YORK, N.Y.



Want to see your dreams come true?

While you wait to receive a new range, you can enjoy the many conveniences of the new CP Gas Range. The new CP Gas Range is being designed for the future. It will be a beautiful, modern, and efficient range. It will be a range that you can be proud to have in your kitchen. It will be a range that will make your life easier and more enjoyable. It will be a range that will be a true investment for the future.

PORTLAND GAS & COKE COMPANY
ONE FOUR BROADWAY, NEW YORK, N.Y.



are your range ideas ahead of the times?

When the time of war is over, be sure to plan for the future. The Portland Gas & Coke Company is now planning for the future. The new CP Gas Range is being designed for the future. It will be a beautiful, modern, and efficient range. It will be a range that you can be proud to have in your kitchen. It will be a range that will make your life easier and more enjoyable. It will be a range that will be a true investment for the future.

PORTLAND GAS & COKE COMPANY
ONE FOUR BROADWAY, NEW YORK, N.Y.

Industry Training . . . War Manpower

Commission Sponsors Effective Course

FOR several years the management has been seeking a training course which would meet the requirements of all departments and divisions of the company, covering its many and varied types of operations. In this connection, from time to time, several supervisory training courses have been considered. Last September 14, Sterling W. Mudge, district director of the War Manpower Commission for the State of New York, appeared before a Company Conference and explained the Training Within Industry courses sponsored by the War Manpower Commission.

He made a very favorable impression on those present. Immediately following this conference, negotiations were initiated with Mr. Mudge, and as a result, competent trainers of the Training Within Industry Division of the War Manpower Commission were assigned to the company. The first two training classes comprised 20 employees, including officers, department heads and their immediate assistants who commenced their training on October 11.

Trainees Enthusiastic

The first two classes completed their instruction and training in all three courses on November 17. The department heads and their assistants were highly enthusiastic about the courses and arrangements were made to continue them. After a number of our supervisors had received training in these courses, several employees were assigned to the Training Within Industry Institute in New York for intensive training as instructors. Twelve of our supervisors were so trained and supplanted the Training Within Industry instructors.

Our employees have been carrying on as instructors for the past several months and the results have been most gratifying. In addition to qualifying as instructor, one of our employees

By J. J. GARLAND

*Assistant Chief Engineer, The
Brooklyn Union Gas Co.,
Brooklyn, N. Y.*

attended the Program Development Institute of the Training Within Industry Division.

The first of the three courses is known as Job Instructor Training. Given to groups of about ten supervisors, the course covers five sessions of two hours each. The need for better instruction of workers is graphically outlined; correct methods of training are described, and finally each member of the course goes through the actual process of instructing another member in the performance of a job. As members of the course become familiar with what is expected of them, the discussions and criticisms are more valuable. The response of our supervisory people has been excellent, and with the active encouragement of the top management of the company, the principles taught are being actively followed in practically every department.

Job Relations Training

The second course, Job Relations Training, is likewise given to groups of about ten for five sessions of two hours each. It is based on the thought that, since a supervisor gets results through people, it is of the greatest importance that all supervisors should learn how to establish and how to maintain good employee relations. In this course as well as the others, actual problems are brought before the group by each participant.

The third course, Job Methods Training, is like the others in numbers enrolled and time consumed. It may be described as "a practical plan to help you produce greater quantities of quality products in less time, by making the best use of the manpower, machines and materials, now avail-

able." Each participant presents a job of his own choosing, first, as it is now done, and, second, as he feels that it should be done. After he has had the benefit of comments from the trainer and his fellow supervisors, he writes up his ideas in the form of a proposal addressed to his immediate superior. Some of the proposed improvements show clearly that many of our supervisors do much effective thinking about the work methods of their company.

As of the end of July 1944 these courses were successfully completed by supervisory employees as follows:

| | |
|--------------------------|-----|
| Job Instruction Training | 378 |
| Job Relations Training | 353 |
| Job Methods Training | 254 |

Some supervisors have completed all three courses and some have completed either one or two, but the training is continuing and will be carried on until most supervisors have taken all three courses.

Tappan's Retail Sales Training Program



Donald S. Sharp

REALIZING the importance of an efficient training program for new and untrained retail sales people to be employed when gas range merchandising is resumed, G. V. McConnell, general sales manager, Tappan Stove Co., has announced the organizing of a sales training program.

The new program, which will also be a "refresher" course for Tappan salesmen, will be directed by Donald S. Sharp, under the supervision of W. Hubert Tappan, vice-president.

With this new program, it will be the duty of the company's representatives to assist in the training of retail sales people through sales meetings, personal contacts and other forms of assistance.

Approval Testing ... New A.G.A. Plan for Gas Appliances Used in High Altitudes



Fig. 1. View of City of Denver, Colorado. Elevation 5,200 ft. with Rocky Mountains (14,000 ft.) in background

ABOUT a year ago officials of gas utilities located in the Rocky Mountain area requested the American Gas Association Laboratories' Managing Committee and the Approval Requirements Committee to establish a procedure by which gas appliances for use in high altitudes could be tested and approved for such conditions. While the present method of specifying a reduction in gas input rating of 5% for each 1000 ft. above sea level had been found to give satisfactory results when properly applied, experience had shown that it did not fully meet all conditions. For example, it was found that the reduction in rating specified was insufficient for some appliances and excessive for others. Furthermore, oversizing of appliances to offset required reduction in rating was not possible on some appliances such as gas ranges. Likewise radiant heaters were not capable of providing sufficient glowing effect at reduced ratings. Other difficulties were also encountered, including instances of failure of installers to reduce ratings to

By F. E. VANDAVEER

*Supervisor, American Gas Association
Testing Laboratories*

the extent required for high altitude operation and a number of other important items.

Approximately 1,200,000 people in cities at elevations between 2,000 and 7,000 feet in the Rocky Mountain area are served by natural or manufactured gas. In the interest of improved service, the general desire of utilities operating there was to provide definite appliance capacity ratings established by test for high altitude conditions. After full committee consideration the Laboratories were instructed to work out a procedure for conduct of suitable tests at the Cleveland and Los Angeles Laboratories to insure satisfactory appliance performance at high altitudes.

After a thorough study of facts available, it became apparent that two ways existed for the testing of appliances at low altitudes to determine whether they would operate satisfac-

torily at high altitudes. One was to employ a special chamber in which any desired altitude condition could be duplicated. The other was to overrate the appliance an appropriate amount, approximately 5% per thousand feet of elevation, and conduct tests at existing barometric pressure.

Use of high altitude chambers of proper size to accommodate testing of appliances was considered impractical for the time being because of the high cost of installing such equipment and the difficulty in obtaining required structural materials. In addition to the total expenditure required, several other objections presented themselves. Chief among them were such items as increased maintenance, longer testing periods and extra engineering labor for operating the chamber with the result that the cost to the manufacturer for any particular test would be nearly doubled. Furthermore, while manufacturers might be accorded the privilege of using such a room it would be impractical as well as inconvenient for them to employ it for development



Fig. 2. Exterior view of altitude chamber



Fig. 3. Interior view of high altitude chamber at Bureau of Standards arranged for this investigation

purposes. Nevertheless it was recognized that, if at a later date it became desirable to resort to the use of high altitude chambers, they should be constructed and installed.

A second plan for testing at low altitudes by suitable overrating of an appliance presented a means of overcoming these disadvantages and at the same time accomplishing the results desired. In Bureau of Standards Research Paper No. 5531, the statement

* Permission to use the Bureau's facilities was obtained through the assistance of E. R. Weaver and J. H. Eiseaman.

is made that "To construct an appliance for use at a high altitude, it must be designed as a whole to burn at sea level an appropriately greater quantity of gas." However, no direct experimental data were available to confirm this theory or to establish the proper increase in rating for low altitude testing. It was decided therefore to secure test data on several representative types of appliances to prove the correctness of this theory.

For this investigation the effect of increased altitude was obtained by two

methods. In one, appliances were moved from Los Angeles (250 ft. elevation) to Lake Arrowhead, California (5,130 ft. elevation) while in the second an altitude chamber at the National Bureau of Standards* in Washington, D. C., was utilized. Initial tests at the Bureau were made at the existing barometric pressure obtained at 230 ft. elevation with subsequent tests at equivalent elevations of 3,000, 5,000, 6,000, 7,000 and 10,000 ft.

An exterior view of the altitude chamber is shown in Fig. 2. Capable of maintaining altitudes above 40,000 ft., this chamber is constructed of 28 in. thick reinforced concrete except for one special explosion relief wall of wood. The door is of 1 in. thick cast steel reinforced on the inside. The chamber is exhausted by a centrifugal blower driven by a 75 HP motor. Approximately 100 tons of refrigeration is provided in the upper 3 ft. of the chamber. Interior side walls are covered with 3 in. thick slabs of cork. Interior working space is about 12 ft. long x 8 ft. deep x 7 ft. high. An interior view as arranged for this investigation is shown in Fig. 3.

17 Appliances Tested

Seventeen gas appliances, considering a range top as one appliance and a range oven as another, were employed. All had been approved by the American Gas Association and were selected as representative modern types. Nine appliances were employed in the Lake Arrowhead investigation and eight additional in the Washington study. Test gas at Los Angeles and Lake Arrowhead was natural gas averaging about 1,050 B.t.u. per cu.ft., 0.60 sp.gr. At Washington, D. C., a mixed natural and manufactured gas 603 B.t.u. per cu.ft., 0.65 sp.gr. was used.

In the first series of tests conducted on natural gas at the Pacific Coast Branch Laboratories² in Los Angeles, appliances were adjusted and tested at various gas input rates to determine the maximum rate at which they could be operated to give satisfactory combustion. In addition to acquiring samples of combustion products and analyzing them for carbon monoxide and carbon dioxide, tests were conducted for burner and pilot operation, flue



Fig. 4. Illustrating decrease in atmospheric pressure and increase in gas volume with increase in altitude—based on test data

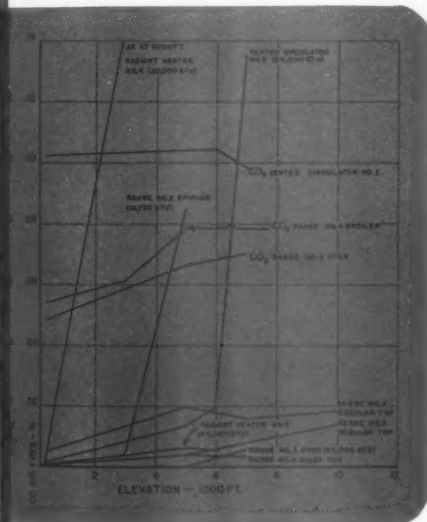


Fig. 5. Effect of altitude on combustion on gas appliances—gas input rates held approximately constant

loss, combustion with the draft diverter outlet blocked, draft hood spillage, glowing of radiants, and automatic lighting in the case of the gas ranges. Test methods outlined in applicable American Standard approval requirements were followed. These appliances were later transported to Lake Arrowhead without change in design or construction and similar tests conducted at the higher elevation.

The second series of tests, made on mixed, natural and manufactured gas at the National Bureau of Standards in Washington, D. C., was planned to determine whether appliances adjusted 25% in excess of their manufacturer's normal rating at low altitude would give comparable performance at this level and at 5,000 ft. elevation. Appliances were first adjusted at $3\frac{1}{2}$ in. pressure at normal input rating and flue gas samples from each analyzed for CO and CO₂. Rating was then increased 25% and similar tests repeated with observations made of flame appearance. Without change in gas or air adjustment the altitude chamber door was closed and the room evacuated to an equivalent altitude to 5,000 ft. By dropping the gas pressure on the orifices from $3\frac{1}{2}$ to 3 in. the full manufacturers' input rating was obtained with no other change whatever made on the appliances. This was done as a rapid means of duplicating the input. Combustion and burner operation tests were conducted both at a normal pressure of 3 in. and at 1.25 normal pressure on ranges and at 1.5 normal pressure on space heaters, corresponding to regular American Gas Association approval test procedure.

On those appliances which failed to comply with established combustion limits at the 5,000 ft. elevation additional tests were made at 3,000 ft. elevation. Those which barely complied at 5,000 ft. were tested at 6,000 ft. elevation, and those which had a large margin of safety were tested at 7,000 and 10,000 ft. elevations. Normal pressures used at the higher altitudes to obtain proper input rate varied from 3.25 to 3.5 in. At the 7,000 ft. altitude tests were made at increased gas pressures of 1.25 and 1.5 normal for the various appliances. Analyses for CO₂ were made with an Orsat apparatus and for CO with new equipment recently perfected by the Gas Section of the National Bureau of Standards.

Volume and Pressure Changes

Atmospheric pressure decreases appreciably with increase in altitude and likewise the volume of gas required for a given B.t.u. input rating is increased. The magnitude of these changes is illustrated in Fig. 4. It will be noted from curve A that decrease in

pressure with increase in altitude to 10,000 ft. is practically a straight line and amounts to 9.12 in. of mercury or 4.55 lb. per sq.in. Barometric pressure dropped from 29.81 to 20.69 in. of mercury. Correction factors for gas volume for these tests decreased from 0.9317 to 0.6386. In order to liberate 1,000 B.t.u. when burning gas of 603 B.t.u. per cu.ft., 1.78 cu.ft. of gas was used at 230 ft. elevation whereas it required 2.49 cu.ft. (curve B) at 10,000 ft. elevation. This is equivalent to a varying percentage increase in volume per 1,000 ft. increase in elevation from 2.8% at 3,000 ft. to 3.98% at 10,000 ft. In other words, at 10,000 ft. it would be necessary to burn 39.8% greater volume of gas as metered than at sea level to liberate the same amount of heat.

Effect of Altitude on Combustion

Effects of altitude on completeness of combustion are shown in Fig. 5. Gas input rate was held practically constant at each elevation, the only variable being decreased atmospheric pressure resulting from the change in altitude. On five of the appliances tested incomplete combustion was far below the allowable limit at elevations up to 6,000 ft., two of them were un-

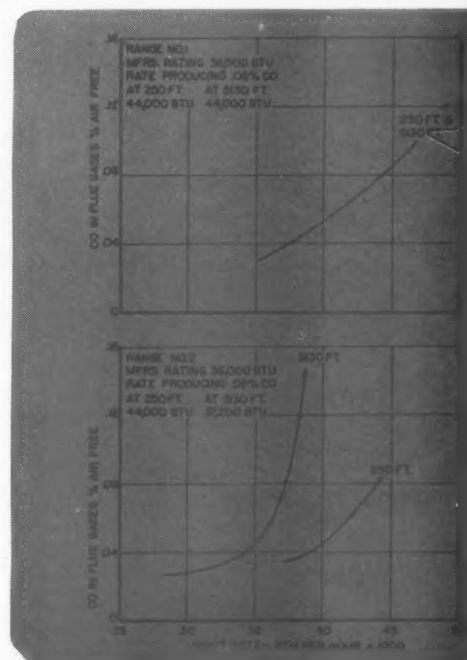


Fig. 6. Relationship between gas input rate and combustion at sea level and 5130 ft. elevation—on range top burners

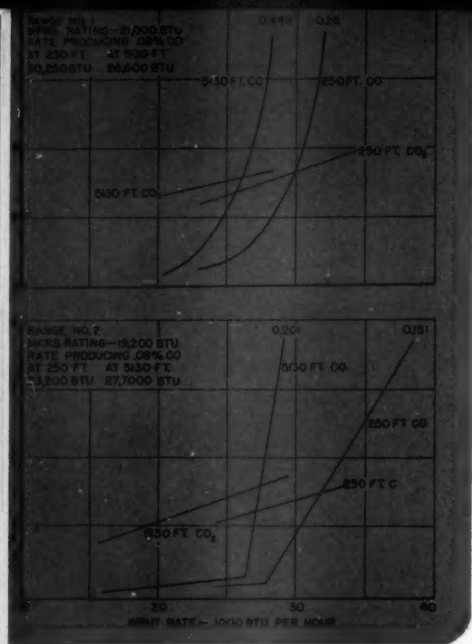


Fig. 7. Relationship between gas input rate and percentage of CO and CO₂ in flue gases at sea level and at 5130 ft. elevation—on range ovens

affected at 7,000 ft. and two others showed little appreciable change up to 10,000 ft. Of the other three appliances the vented circulator did not exceed the allowable limit on combustion at altitudes up to 6,000 ft., the range broiler was satisfactory up to 4,590 ft.; whereas radiant heater No. 1 was satisfactory up to 600 ft. The radiants in this particular heater were evidently too restricted to permit any variation in test conditions.

Nine other appliances not shown in Fig. 5 and operated on natural gas showed no appreciable increase in percentage of carbon monoxide at 5,130 ft. elevation over that obtained at sea level. The CO₂ curves for the vented appliances in Fig. 5 indicate that as altitude is increased, the CO₂ increases until combustion is incomplete and then it decreases as shown by the curve for the vented circulator. Carbon dioxide does not increase uniformly for various appliances with increases in altitude.

On nine appliances tested in the Lake Arrowhead investigation, gas input rate was increased at each altitude until combustion failure occurred. Typical results of these tests are shown by Figs. 6 and 7. As an example, refer to Fig. 7, range No. 2 oven curves. At sea level combustion was complete until the rating had been increased to about 33,200 B.t.u. per hr. and at 5,130 ft. elevation combustion was sat-

isfactory up to about 27,700 B.t.u. per hr. Both of these limits are greatly above the normal rating of 19,200 B.t.u. per hr. As gas rate was increased the CO₂ in flue gases increased gradually at each altitude.

The effect of altitude and gas input rate on a radiant heater operating on mixed gas is shown in Fig. 8. It will be noted that as the input rate was increased up to 28,300 B.t.u., combustion was practically complete. Increasing the rate to 26,000 B.t.u. per hr. at 5,000 ft. produced 0.02% CO air free; to 22,500 B.t.u. per hr. at 6,000 ft. gave 0.02% CO.

Burner and Pilot Operation

When usual burner and pilot operation tests outlined in the various approval requirements were conducted, no change attributable to the effect of high altitudes could be detected. As altitude was increased the flames seemed to lengthen and soften even with the air shutter wide open. On the high broiler, oven and range top burners this lengthening of the flame was quite noticeable. It did not, however, cause any difficulty from incomplete combustion on the range top and oven burner. Broiler burner flames finally lengthened until impingement occurred on the broiler top and on the safety device thus causing an increase in percentage of carbon monoxide in the flue gases.

Effect on Efficiency

In determining the effect of alti-

tude on efficiency of gas appliances, flue loss measurements were made on a vented circulator, a basement furnace and a floor furnace at elevations of 250 and 5,130 ft. Data revealed that while flue gas temperature increased from about 14 to 27.5 F. with an increase of nearly 5,000 ft. in elevation, CO₂ also increased from 1.0 to 1.8%; yet resultant flue loss decreased only slightly (from 0.6 to 1.3%). This comparison made at the same input rates at each elevation indicates that while altitude causes a slight increase in efficiency it is so small as to be almost negligible.

National Bureau of Standards¹ efficiency tests on a regular range top burner at 9,000 B.t.u. input at sea level and at 10,400 ft. elevation, indicated an average efficiency of 31.0% at sea level and 33.2% at 10,400 ft. elevation. It was concluded that the effect on gas range top burner efficiency might be in either direction, depending upon the original adjustment of the burner. The observed difference of 2.2% is within that obtained in normal field operation, and therefore, it may be stated that the effect of altitude on thermal efficiency seems negligible although there appears to be a slight improvement with increases in altitude.

Glowing of Radiant Heaters

It was not possible during this investigation to make radiant efficiency

(Continued on page 379)

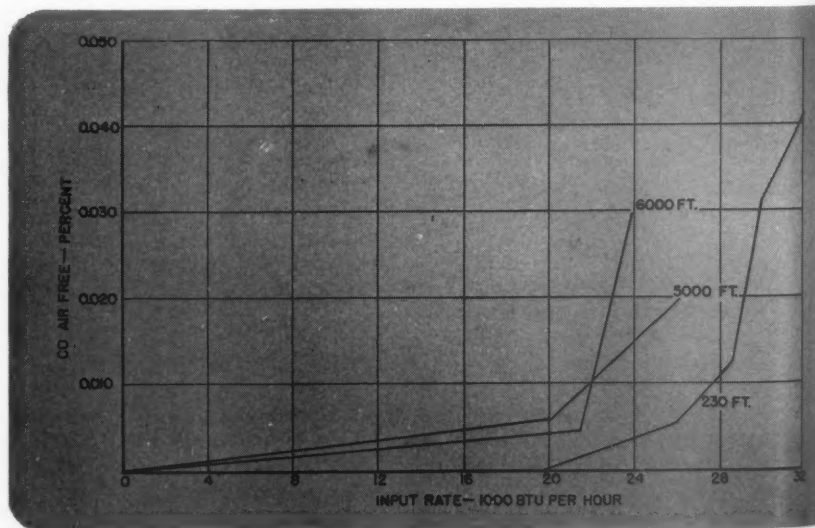


Fig. 8. Effect of altitude and input rate on combustion of radiant heater No. 2

The Future Production and Quality of Coal

THIS will be an attempt to treat an all inclusive subject of the future in a manner that is of extreme importance as of today. Many of the statements may be denied, many it is hoped, will be affirmed. If it arouses sufficient interest to bring the gas coal producer and the gas coal consumer into a constructive consideration of current problems as well as those of the future, time will not have been wasted. There is too wide a breach in the ultimate objectives of the coal industry and the gas and by-product industry, or for that matter any coal consumer.

Future Supplies

Of first importance in this discussion is the future supply of gas coals. What are our natural reserves? To begin with our national records are not maintained on a use classification basis. The Bureau of Mines has certain figures pertaining to anthracite, bituminous and sub-bituminous coals and estimates have been published periodically on the number of hundreds of years' supply in this country based on present consumption, but the quality and present use standards have been given little consideration. Figures can be estimated on available known reserves of Eagle, Chilton, Powellton, Pocohontas, Pittsburgh and other seams in which the gas and by-product man is interested. It was the intention to dig out these figures. Then the question how!!

A coal from a designated seam is regarded as a good by-product-water gas-retort or steam coal. Its known reserves are so recorded. In "B" county of "B" state the average of that seam may be 50" with a 4" parting. The same seam four miles away may be 32" with no parting or a 12" parting.

Presented at Joint Production and Chemical Committee Conference, Technical Section, American Gas Association, New York, N. Y., June 6-7, 1944.

By Z. C. WAGONER

Amberst Fuel Co., Charleston, W. Va.

The volatile can vary 4% plus or minus and depending on the mining practice and preparation the coal shipped can vary from 4 or 5% ash to 10% ash plus or minus. In other words you have change in seam characteristics plus mining practice plus available preparation facilities plus financial ability of producer plus other variables and then you can't arrive at a true picture. We might as well assume nothing and face the facts.

Best Grades Used First

In America we are using up our best grades of coal first according to the economic conditions involved. We have available sufficient high grade coals for each use for present requirements. That condition we know will not change next year or the next or the next year. But there will come a day, and we are doing very little about it. True, as what we presently call high quality coking coals are used up, you in the business of carbonizing coals will change present methods to meet the requirements or the coal producer will change present preparation practice to ship a product to meet current specifications. Therein lies the economic balance. Will the consumer of coal spend money to use lower grade coals or will the producer spend money to make low grade coals meet higher specifications? If the latter, you must expect higher prices.

One or the other is inevitable. Will our hundreds of years of coal reserves have to replace oil and natural gas reserves? For over twenty years we have had only twenty years' supply of oil. The answer is still theoretical. The same is true of natural gas. It is not impossible that in twenty years our heat energy will be obtained from the

sun. Then what happens to our natural reserves of oil and coal?

Both the consumer and producer of coal must centralize research in order to be prepared for the future. Little progress has been made in basic practice in gas manufacture or operation of by-products plants, because coals of high quality have been economically available. The coal producer will invest in improving his product only as the consumer demands it.

It would be rank oversight not to mention the equipment manufacturer at this point because he is caught between the producer and consumer. His problem is to provide means to use a poorer and cheaper coal producing lower unit costs in the finished product, and as result is responsible for a large percentage of economies that have been effected. These factors give in a few words the present commercial status of coal and the industry as a whole.

This discussion is interested in special-purpose coals as they apply to manufactured gas and by-products:

Government Coal Stabilization

What has government done toward stabilizing and conserving gas coal and will we re-enact the post-World War I experience? It is not expected that history will repeat in this instance.

Because of and not in spite of the Bituminous Coal Act of 1937, the coal industry had re-established itself before this country was actively engaged in World War II. That Act permitted the majority of the bituminous coal producers to know that they could market their coal at not less than their cost of production. It was designed to make realization equal cost. Without hamstringing management, it made possible the stabilization of the coal industry; allowed producers to reasonably plan their operations for the immediate future, instead of living a hand-to-mouth existence; permitted the

financing of mechanization for increased production and improve cleaning and preparation equipment. Therefore the coal industry entered the present emergency period well prepared to meet consumer demands as far as management and physical equipment were concerned. The less said about the human or labor side of the question at this time the better.

Because national and/or state politics were for all practical purposes pretty well eliminated from the actual functioning of the various departments comprising the Bituminous Coal Division (and incidentally it was a division of the Department of the Interior)—in general the industry received impartial consideration.

Today the Bituminous Coal Act of 1937 is non-existent. Instead of minimum prices we have maximum prices and a market in which both spot and contract shipments are made at "maximum price at time of shipment" for every grade and size produced. That condition will not necessarily prevail in the postwar market. But remember present maximum prices should approximate future minimum prices.

Conservation Program Needed

What then? The productive capacity of the coal industry with adequate labor available will be keyed up far above the demand. The old rule of supply and demand will have its effect. The consumer will have a choice of producer, and the producer must meet designated specifications. Unless legislation is enacted to protect the coal industry from itself, or the coal industry decides to work as a unit—and it never has—it is easy to see that this most valuable fundamental natural reserve of this country will be selfishly wasted. Wasted because the special-purpose coals will be used for indiscriminate uses for which lower quality coals can be substituted. Legislation similar to the former Coal Act will protect the higher quality coals for future use; protect the producer against himself and greedy competition; protect the consumer and insure a longer life for present equipment that demands special-purpose coals.

Legislation is practical to that extent. It must not however allow government control of management or operation. Private enterprise must be per-

mitted to preserve the American way of life, and a healthy industry.

Producer and His Problems

With the coal producer lies the answer to the quality of coal to be delivered to the future consumer. To know what he is going to do you must know something of his past.

Howard N. Eavenson in his book entitled "The First Century and a Quarter of American Coal Industry" published in 1942 makes this statement:

"Generally speaking, more profits relative to the amount of capital employed were made before 1885 than have been made since then. The industry has never been a very profitable one, and more money has been made by the speculators in, and lessors of coal lands than by those operating the mines."

Starting as small independent producers the hardy pioneers in the coal industry were scattered over large areas and the use of coal as a basic fuel was not generally known until after the annual tonnage consumed was an appreciable amount. There was little tendency toward consolidation of interests, but marked rivalry not only between individual operators in different producing districts but between individual operators in the same producing district. That same condition is general today.

Don't let anyone tell you that the producers of coal have made fabulous millions. The wonder is how they were able to continue to produce the nation's requirements at the prices current from 1930 through 1938. Losses or failures were the rule.

That resulted in mining only the highest quality coal available and it was sold for whatever use the highest price could be obtained. No concerted action was made in research for future use. The cream of the crop was mined.

To maintain the quality of coal now accepted for special purpose use demands constantly improved preparation facilities. The producers in all fields are either presently installing—if priority ratings are obtainable—or are planning improved preparation facilities. That processing by the producer does not reduce production expense; it increases it, but it increases the value of the finished product to the consumer.

Consumer demand has always controlled the producer. Under present emergency demands the special-purpose coal consumer has been forced to accept what he calls sub-standard grades. That is a production necessity.

We term mines operated by the ultimate consumer as captive mines. That has developed a conflict within organizations as to where the responsibility of the captive mine begins and the ability of the by-product or steam plant to use its own product ends. So much so that a third organization has on occasion been set up to dictate the limits. That is possible in a wholly owned corporate setup. Between private consumer and independent producer it is a problem.

The gas and/or by-product industry must look to the day when lower quality fuels can be utilized economically. At the same time the coal industry must improve its available product to meet the current demands. With a closer association between the two industries, a better understanding of mutual problems will result and progress in mutual problems will keep pace with industrial demands.

There are too many variables and too many unknowns for any one person to forecast the next twenty-five years. It behooves both producer and consumer to keep in close touch with each succeeding development. To the early bird goes the worm.

Rome Cooks with Gas After Charcoal Era

ROMANS will be able to cook with gas in September after seven months in which they have had to prepare meals over blackmarket charcoal or illegal electric stoves, Allied engineers revealed August 23.

Rome's gas works have been put in shape and a coal reserve enabling resumption of operations this month is being piled up. The engineers declare that a 1,500-ton reserve before starting is necessary to insure continued operation. Present plans call for providing gas 90 minutes daily at the outset.

Fifty per cent of primary installations in the gas works and all secondary plant escaped German destruction. Only a transportation bottleneck is delaying the piling up of coal stocks. When the gas works resume operations they will rely mainly on Sardinian coal mixed to the extent of 30 per cent with local lignite.

Multiple Venting of Water Heaters

SINCE installation of several automatic storage gas water heaters at a single location was frequently encountered in apartments and flats, the gas companies in Los Angeles arranged for a series of tests of the best methods of venting more than one water heater into one chimney flue. The tests were carried out by the Gas Appliance Laboratory on behalf of the Southern Counties Gas Company and the Southern California Gas Company.

Previous to these tests, the local building ordinance required every gas fired water heater to have an entirely separate and independent chimney flue except that two or more water heaters operating in conjunction with a single large storage tank and controlled by a single thermostat located in this storage tank could be vented into a single flue.

The purpose of these tests was to determine whether or not more than one water heater could be satisfactorily vented into a single flue and to determine what requirement should be included in an ordinance allowing more than one water heater to be vented into a single flue that would assure the proper and safe operation of such installations. In the course of this investigation one type of so-called "Siamese" connection (Fig. 3) recommended by some equipment manufacturers was investigated. Connections as shown in Fig. 4 (bottom entry and 45° angle connection) were found to give the best performance.

General

The purpose of this investigation was to determine the possibility of multiple venting of water heaters into a common flue in connection with a proposed change in the local ordinance covering this subject.

The principal criterion governing the acceptability of any venting arrangement is the presence or absence of spillage of combustion products

By E. H. MOHR

*Southern California Gas Co.,
Los Angeles, Calif.*

at the draft hoods of the heaters. Consequently, the method of test is important. The test procedure for this investigation was taken from the A. G. A. Approval Requirements for Water Heaters and was as follows:

Titanium tetrachloride smoke was introduced ahead of the draft hood. A beam of light was then directed across the relief openings of the draft hood, and the heater was judged to be venting properly if no smoke could be observed escaping from the relief openings.

Description of Arrangements Tested

Four Welsbach "Hot Zone" water heaters of the full-floating tank type (input to each, 25,000 B.t.u./hour) and one Welsbach "E-Z-Hot" water heater of the internal flue type (input 17,000 B.t.u./hour) were used in the tests.

The vertical flue used in all tests

was Payne "A" vent pipe (double-wall construction) with an internal diameter of six inches and vertical heights were taken as the distance from the top of the heaters to the top of this stack. Horizontal lengths are the longest runs existing in each arrangement.

A rise of one inch per foot was maintained throughout the horizontal run in every test set-up. Also, each test was conducted for a sufficient length of time to allow stack temperatures to come to equilibrium.

Ratios of vertical height to horizontal length of both 1 to 1 and 2 to 1 were used in the tests. Because of the difficulty encountered in finding an arrangement that would work, together with the relative dimensions of the test set-up as installed, the use of a 2 to 1 ratio seemed advisable for a majority of the tests.

Table 1 shows the principal data regarding the various arrangements of flues.

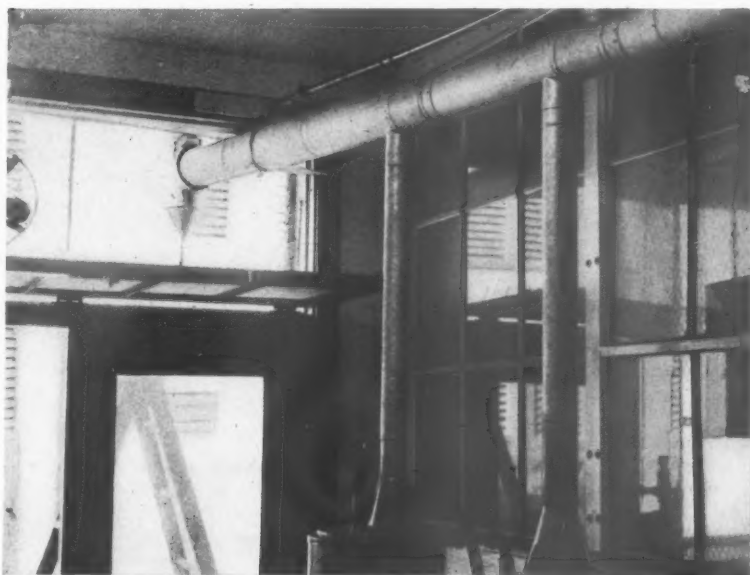


Fig. 1. This picture shows the 50% enlargement set-up which provided an exact increase of 50% in cross-sectional area at each successive vent connection. This fitting was first tested with side entry and then with bottom entry as shown



Fig. 2. Bottom entry right angle connection to 6" diameter header

Test Results

*Test No. 1

- (a) Only No. 1 heater satisfactory in any combination. . . .
- (b) As before only No. 1 heater was satisfactory in any combination. This heater was tried in each of the other four positions and was found to be satisfactory, indicating that the lower input to this heater (17,000 B.t.u./hour) was handled whereas, the higher input of each of the other heaters (25,000 B.t.u./hour) was not.

Test No. 2

- (a) With all heaters connected only No. 1 worked under any combination. With all other heaters capped off any one heater would vent alone.

* Refer to Table No. 1.

- (b) Heaters Nos. 1, 2, and 3 worked satisfactorily but Nos. 4 and 5 spilled badly at all times.
- (c) No appreciable difference from previous arrangement.

Test No. 3

Heaters Nos. 4 and 5 spilled badly at all times with all heaters connected. With No. 1 heater capped off conditions remained unchanged.

Test No. 4

With all heaters connected Nos. 4 and 5 spilled badly. With No. 1 heater capped off, heater No. 5 spilled for a period of only two minutes after the four heaters were turned to maximum flame from equilibrium minimum flame stack

temperatures (others satisfactory immediately).

Test No. 5

- (a) With four heaters connected all vented satisfactorily from a minimum flame stack temperature start.
- (b) With four heaters connected, from a minimum flame stack temperature start, heaters Nos. 1 and 2 vented immediately, No. 3 after one minute's operation and No. 4 after two minutes.

Aside from slight differences in temperature readings, caused by the 11 to 14 degree lower outside temperature, no appreciable difference in the venting of the system was noted with the exception of the formation of water of condensation in the flue. Tests were conducted exactly as before—the first test being made with five heaters in operation. Here again Nos. 4 and 5 spilled at all times. A small amount of condensation was noted at the conclusion of the test. A second test was made with No. 1 heater capped off and this arrangement vented satisfactorily, as before. A very considerable amount of condensate formed during this test. By calculation, the dew point temperature of the stack gases under the conditions existing during the test was approximately 102° F. Since the maximum stack temperature reached at the top of the stack during the second test was 107° F. (measured centrally in the stack) it is easily conceivable that condensate would form during the warm-up period and might continue to do so if the temperature of the gas flowing immediately next to the wall of the stack were to remain below this value.

Discussion of Results

A comparison of the data obtained during these tests was made with that con-

TABLE 1—ARRANGEMENTS TESTED

| Test No. | No. of Heaters Connected | Place-ment of Heaters | Header Type | Entry | Vert. Height | Horizontal Run | | | | Ratio Vert./Hor. |
|----------|--------------------------|-----------------------|---|--------|--------------|----------------|--------|---------|-------|------------------|
| | | | | | | 3" flue | Header | 6" flue | Total | |
| 1a | 5 | A | Siamese | — | 18.5' | 15' | 1.5' | 17.0' | 33.5' | 0.55 |
| 1b | 5 | A | Siamese | — | 35.5' | 15' | 1.5' | 17.0' | 33.5' | 1.06 |
| 2a | 5 | A | 50% increase | Side | 35.5' | — | 10.5' | 23.0' | 33.5' | 1.06 |
| 2b | 5 | B | 50% increase | Side | 35.5' | — | 10.5' | 6.5' | 17.0' | 2.08 |
| 2c | 5 | B | 50% increase | Bottom | 35.5' | — | 10.5' | 6.5' | 17.0' | 2.08 |
| 3 | 5 | B | Siamese | — | 35.5' | 12' | 1.5' | 3.5' | 17.0' | 2.08 |
| 4 | 5 | B | Straight 6" pipe with right angle entry | Bottom | 35.5' | — | 10.0' | 7.0' | 17.0' | 2.08 |
| 5a | 4 | B | Straight 6" pipe with 45° angle entry | Bottom | 35.5' | — | 10.0' | 7.0' | 17.0' | 2.08 |
| 5b | 4 | B | Straight 6" pipe with 45° angle entry | Bottom | 20.0' | — | 10.0' | 7.0' | 17.0' | 1.18 |

tained in Industrial Gas Utilization Data, Capacities of Vents and Flues for Gas Burning Equipment, prepared by Frank Wills of the Pacific Gas and Electric Company. In the cases where outside air temperatures encountered during these tests were low enough to permit use of Mr. Wills' figures, results in general were found to be in close agreement. These were generally that:

1. For the small differential temperatures found to exist in this type of installation between average stack temperature and outside temperature, no more than four heaters, with inputs as used (total 100,000 B.t.u./hour), could be

successfully vented into a common flue of the size used (6" in diameter).

In summation those arrangements which were found to vent satisfactorily were:

1. Four heaters, bottom connected at right angles to a 6" diameter header, vertical height 35.5', horizontal length 17'; 6" diameter stack.
2. Four heaters bottom connected at a 45° angle to a 6" diameter header, vertical height 35.5', horizontal length 17'; 6" diameter stack.
3. Same as (2) above except for a vertical height of only 20'.

From this it appears that for the four

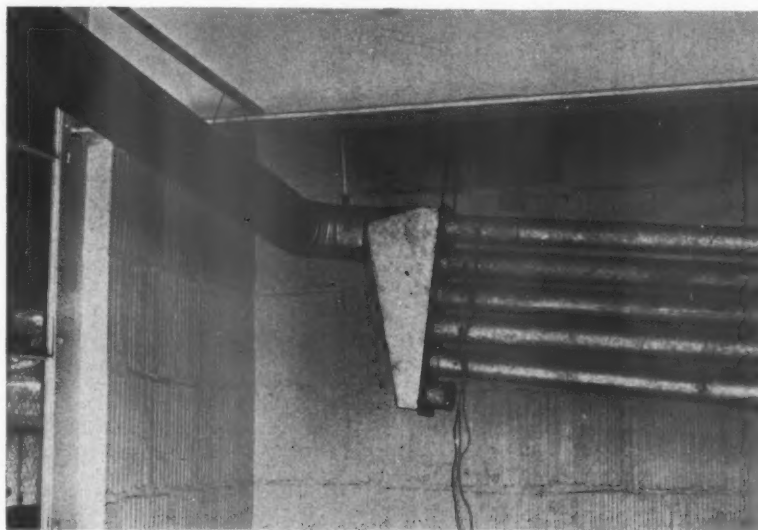


Fig. 3. Siamese Fitting (Bottom, capped connection, providing connection for possible sixth heater was never used during tests)

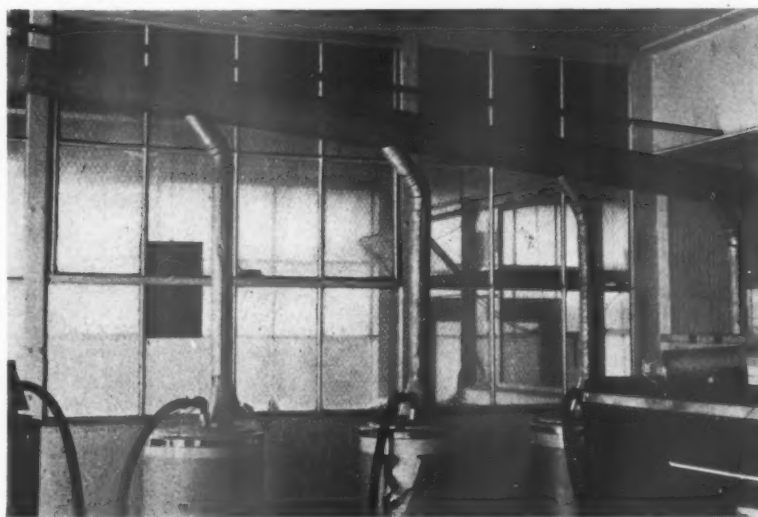


Fig. 4. Bottom entry, 45° angle connection to 6" diameter header



Fig. 5. This picture gives a general view of the stack and the scaffold built to support the stack and permit temperature observations

heaters to vent properly with a ratio of stack height to horizontal length of not greater than 1, the heater connections must be angle connected into the header. To provide some factor of safety to allow for the variables of different installations, it appears advisable to limit this ratio to a minimum of 1 with a maximum horizontal run of 20'. Further, it appears that if the installation will provide a ratio of 2, the heaters may be right angle connected to the header.

It should be pointed out that no work has been done relative to condensation in connection with multiple venting. Another factor of importance is the development of a satisfactory, simple, and inexpensive method of installation. Aside from the one Siamese fitting used which was very unsatisfactory, all receiving headers were specially built to accommodate the heater spacing.

Conclusions

Based on the results of tests made to date the following conclusions have been reached:

1. With vertical height of stack maintained equal to horizontal length of run (stack not less than 20' tall), four water heaters may be satisfactorily vented into a common flue 6 inches in diameter, provided the heaters are connected to the header at a 45° angle.
2. A bottom entry right angle tee connection into the 6-inch header is satisfactory if a two to one ratio of vertical height to horizontal length is maintained.
3. It does not appear advisable to vent more than four automatic storage water heaters into a single flue.

Application Manual for Architects and Builders Being Prepared by A. G. A.



Leon Ourusoff

FOR nearly a year a large group of gas company men have been busy preparing an application manual on modern gas service in the home. It is planned to have the manual available in the near future to all gas companies for distribution to their architects and builders. It will be known as the "Architects Manual of Modern Gas Service."

The work is being carried on by the subcommittee on Publicity and Specifications under the auspices of the Committee on Housing of the American Gas Association. Leon Ourusoff is chairman of the latter committee and the subcommittee is under the chairmanship of H. P. Morehouse.



H. P. Morehouse

The purpose of the manual is to make available to the architect and builder authentic information which will guide him in the selection of adequate and quality equipment, to outline recommended practices for the installation of various gas appliances in the home and to supply him with uniform manufacturers' specification sheets for various appliances giving necessary information on roughing-in dimensions. Wherever practical sample architect specifications for the installation of the various types of appliances are being prepared.

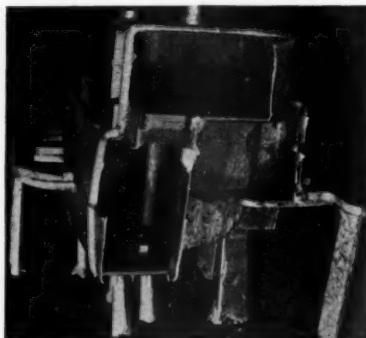
Material is being obtained from such authoritative sources as American Institute of Architects, American Standards Association, American Gas Association, American Society of Heating & Ventilating Engineers, National Board of Fire Underwriters, National Warm Air Heating and Air Conditioning Association, United States Department of Commerce, Federal Housing Administration and a wide sampling of utility company experience.

This effort to bring together under one cover all of the available yet reliable information on gas services for the use of the architect and builder has moved forward to the point where completed drafts have been

prepared for most of the following proposed sections:

- I. Forward
- II. Gas Piping
- III. Chimneys, Flues and Vents
- IV. Gas Cooking
- V. Gas Refrigeration
- VI. Kitchen Planning
- VII. Gas Water Heating
- VIII. Gas Heating
 - a. Steam Heating
 - b. Hot Water Heating
 - c. Winter Air Conditioning
 - d. Gravity Warm Air Heating
 - e. Floor Furnace Heating
 - f. Direct Space Heating
- IX. All Year Gas Air Conditioning
- X. Modern Home Laundry
- XI. Basements and Utility Rooms

Epic of War Production



Of such are bombers made

TRIALS and tribulations of a war materials' manufacturer are dramatically illustrated by the accompanying picture and poem, both of which were sent to the MONTHLY by R. S. Agee, vice-president of Roberts & Mander Stove Co., Hatboro, Pa.

The photograph shows one of the rough castings of a mixing chamber for twin-motored bombers. Of course, the picture was taken before machining. It is Roberts & Manders' job to turn out such rough castings as finished and efficient accessories for the Army Air Forces. That the company has succeeded in doing so, is another epic of wartime production and tribute to the manufacturer's resourcefulness.

XII. New Developments and Miscellaneous Helpful Information

The manual will be prepared in such a way that the emphasis will appear to be on the technical phases rather than the sales side of gas promotion. However, a reasonable amount of space will be devoted to acquainting the architect and builder with the growth of the gas industry in recent years, our research appliance testing, Certified Performance programs, etc.

It is planned to use a loose-leaf type of binding with a stiff leather finish cover. The loose-leaf feature will allow additions or changes with a minimum of trouble. This gives the gas company an opportunity and a good reason to make frequent call-backs on the architect and builder to keep the manual up-to-date. The value of this opportunity for frequent contact will be obvious.

The subcommittee will distribute the first draft of the material to a wide selection of gas companies so that the committee can have their opinions and guidance. This will be done at an early date. It is planned to have the completed manual available late this fall.

THE CRAFTY DRAFTSMAN

*The designer sat at his drafting board
A wealth of knowledge in his head was stored*

*Like "what can be done on a radial drill
Or a turret-lathe or a vertical mill"?
But above all things, a knack he had
Of driving gentle machinists mad.
So he mused, as he thoughtfully scratched
his bean:*

"Just how can I make this thing hard to machine?

*If I make this body perfectly straight
The job had ought to come out first-rate
But 't would be so easy to turn and bore
That it never would make a machinist sore.
So I'll put a compound taper there
And a couple of angles to make 'em swear
And brass, would work for this little gear
But it's too damned easy to work, I fear,
So just to make the machinist squeal
I'll make him mill it from tungsten steel!
And I'll put these holes that hold the cap
Down underneath where they can't be tapped.*

*Now if they can make this, it'll just be luck
'Cause it can't be held by a dog or a chuck
And it can't be planed and it can't be ground*

*So I feel my design is unusually sound!"
And he shouted in glee: "Success at last!"
"This goddam thing can't even be CAST!"*

They're Always With Us

"Good morning, madam. I'm from the gas company. I understand there's something in the house that won't work."

"Yes, he's upstairs."

—Ivy Leaves (4th Div. Ass'n).

Pittsburgh Plan...for Building

Postwar Gas Range Sales Volume

THE Equitable Gas Company, The Peoples Natural Gas Company, and the Manufacturers Light and Heat Company have joined in sponsoring a forward-looking postwar gas range promotional program which has already elicited enthusiastic response from gas range manufacturers throughout the country.

This postwar promotional program is outlined in a booklet published by the Natural Gas Companies Serving the Greater Pittsburgh Area, entitled "A Plan for Building Postwar Gas Range Sales Volume in the Pittsburgh Area." Copies of this booklet, just off the press, have been sent to all gas range manufacturers and to all gas range distributors in the Pittsburgh area, and are now being distributed, through personal calls, to all gas range dealers in the service areas of the three Pittsburgh gas companies.

The "Plan for Building Postwar Gas Range Sales Volume" booklet describes the proposed program outlining the territory to be covered, the reasons why gas range manufacturers should concentrate sales and promotional activities in this territory, the size of the potential gas range market, the prerequisites for obtaining maximum sales from this territory, and suggests a plan of operation and cooperation in the promotion of gas ranges which will accomplish the objective, which is an annual average sale, for the first five postwar years, of 125,000 gas ranges.

The underlying principle of this program is close coordination among gas range manufacturers, distributors, dealers, and gas utilities in their gas range promotional activities.

The Pittsburgh Territory

The Pittsburgh territory is an area which has Pittsburgh as its center and includes, roughly, those portions of Pennsylvania, West Virginia, and Ohio

By CHRISTY PAYNE, JR.

Chairman, Trade Development Committee, Natural Gas Companies Serving the Greater Pittsburgh Area

which lie within a one hundred mile radius of Pittsburgh. This territory has approximately 900,000 domestic gas meters, serves a population of almost 5½ millions, and has an estimated 1,000 gas range dealers.

There are a number of reasons why manufacturers are urged to concentrate their promotional activities in this Pittsburgh Area under the proposed program. The area is a compact all-natural-gas territory, with substantially

similar geographic, climatic and economic conditions throughout.

It is a territory which can be easily and efficiently served out of Pittsburgh. Transportation, warehousing and distribution facilities are excellent, and in normal times railroad, express or truck deliveries from Pittsburgh to all parts of the area can be made in less than 24 hours.

Additional reasons for concentrating activities in this area are the fact that the three local gas companies already have had 11 years of cooperative advertising and promotional experience, and have for 5 years sponsored a joint dealer program which it is expected will form the nucleus of this expanded activity.

Trade Development Program

The Gas Appliance Promotion Division of Ketchum, MacLeod and Grove, Inc., which is the organization handling the present dealer program for the three Pittsburgh gas companies, will function as the agency to coordinate promotional activity among gas utilities, manufacturers, distributors and dealers in this proposed program.

The Gas Appliance Promotion Division, inaugurated in 1939, has continued uninterrupted up to the present time. Its staff includes a director, two field men, and an editorial man. Activities include close personal contact with dealers, distributors and manufacturers' representatives; the publication, once a month, of a dealer house-organ; and, prior to the war, special promotions of gas appliances, particularly gas ranges, on an area-wide basis, with advertising, display material, dealer contacts, dealer meetings, etc.

Organized to promote the sale of quality gas appliances among dealers, to foster dealer good-will, and to encourage dealer cooperation in sales

When Mother was a Girl,
the dealer showed this as the "last word" in a Gas Range!

but... Mother and Grandmother too both envy you the beautiful efficient GAS RANGE as we know it today!

It is hard to realize how greatly the Gas Range has improved through the years. The Gas Range of 1910, then just getting back in the old-fashioned, built with the range of one burner. Considerable progress had been made in the use of gas, but the range was still a simple affair. The new design was the first to have a built-in oven, and a built-in broiler. These two features in design were of historic importance. The first to have a built-in oven, and a built-in broiler. These two features in design were of historic importance. The first to have a built-in oven, and a built-in broiler. These two features in design were of historic importance.

PLAN NOW FOR YOUR ALL-GAS HOME

Natural Gas Companies Serving the Greater Pittsburgh Area

Current advertising of the Pittsburgh companies whets customers' appetite for postwar gas ranges



A modern canning "clinic" gains more goodwill for the Manufacturers Light and Heat Co., Pittsburgh. Flora G. Dowler, home service director and winner of the 1943 McCall Award gives busy homemakers pointers on war-type jar tops. Under her direction, canning clinics are held in all eight districts served by the company. At extreme right in the picture is Helen Vernon, district home supervisor at Bellevue, Pa.

programs, the Gas Appliance Promotion Division has an enviable record of accomplishment. It has substantially increased gas range sales per dealer; it has increased average selling prices of gas ranges—from \$79.50 in the fall of 1939, for example, to \$108.41 in the fall of 1941; it successfully established CP ranges in the territory and increased average sales price of CP ranges from \$119.02 to \$133.47 in one year; and it has developed a definitely cooperative spirit among dealers which provides a valuable groundwork for intensified activity planned for after the war.

Gas Range Market

The gas range quota set up in this proposed program is 125,000 gas ranges per year, average, for the first five postwar years.

This quota for the Pittsburgh territory is not just picked out of the air, but is based on the following calculations:

Based on a 1943 survey of a portion of the Pittsburgh market, it is estimated that the average age of gas ranges in this area at the end of the war will be approximately 10 years.

From a competitive standpoint, such an average age is too high, and it will be desirable to reduce it to, say, 5 years by the end of the 5-year period following the conclusion of the war.

To do this will require the sale of an average of approximately 125,000 gas ranges per year for this 5-year period.

The gas companies' share of this quota is 10%, with the dealers' quota 90%. This allocation of total sales is indicative of the desire of the gas companies to work closely with dealers and to have them sell the overwhelming majority of gas ranges. Such a plan is of course designed to secure maximum cooperation from dealers.

Manufacturers' Part

Four prerequisites for obtaining maximum gas range sales volume from the Pittsburgh district are listed in the booklet. First, each manufacturer should see that he has the best possible sales representatives covering the territory. Second, each manufacturer should secure the best possible dealer outlets. Third, maximum sales and promotional help should be extended to dealers by the manufacturer. And fourth, coordinated promotion of gas ranges, with all manufacturers cooperating in area-wide campaigns at the same time, should be a definite part of the activity.

Manufacturers are not asked to pay any part of the gas companies' or the Gas Appliance Promotion Division's expenses. They are simply offered an opportunity to coordinate their activities with those of the gas companies, in a program which, because it will be soundly planned and because it will offer a united front, will offer an unusual sales opportunity. It is pointed

out that each manufacturer's share of the total market will depend on how actively he cooperates in the over-all program.

Plan of Operation

The plan of operation contemplates the following:

- a. Twice-yearly area-wide gas range promotions. These will be broad, over-all promotional programs sponsored by the gas companies to promote high quality gas ranges generally, without reference to individual trade names. Included will be window and store displays, newspaper advertising, radio spots, other forms of advertising, including home service demonstrations, dealer meetings, etc. Manufacturer-sponsored promotional programs are to be coordinated with gas company programs, designed to push the manufacturers' own brands.
- b. Continuing year-round contact with dealers to encourage greater attention to gas ranges and gas range selling, through personal contact by representatives of the Gas Appliance Promotion Division, special mailings, sales bulletins, and a continuing emphasis on gas ranges in the monthly publication "Gas Appliance Dealer."
- c. A central clearing house for gas range promotional activities. The Gas Appliance Promotion Division will act as a central clearing house for all gas range promotional activities and will welcome suggestions from cooperating gas range manufacturers. The division will maintain close contact with manufacturers to obtain best possible coordination of activities.

The advantages of this coordinated program are listed as follows:

1. It will increase gas range sales both in actual units and in relation to population or meters.
2. It will stimulate the sales of better quality gas ranges.
3. It will strengthen the competitive position of gas ranges.
4. It will provide a maximum of promotional activity at minimum cost; it will permit putting into the Pittsburgh territory a greater volume of promotional effort, through coordination, than could possibly be done if each manufacturer goes his own way.

This program was developed by the Trade Development Committee of the Natural Gas Companies Serving the Greater Pittsburgh Area. The membership of the committee is as follows: Christy Payne, Jr., The Peoples Natural Gas Company, Chairman; W. L. Hutcheson, Manufacturers Light and Heat Company; and F. B. Jones, Equitable Gas Company.

Browse-Around Corner Unique Idea of Providence Gas Company

THE Browse-Around Corner of the Providence Gas Company, Providence, R. I., is a colorful spot and represents a unique idea of the home service department. The background and the show cases are painted turquoise blue; inside of cases is white, as are the frames for the posters, which have chocolate brown mats. Chocolate brown covers the tops of the shelves inside the cases, paper doilies are under the jars. Fluorescent lighting makes the jars stand out in brilliant colors.

The exhibits on the tops of the cases have been considerably augmented, so that there is plenty to see and inspire. Whatever is plentiful is featured on one case—jars showing all the different ways of using that food are grouped together. On the other case is a group showing what the Girl in White will can at her next demonstrations. Usually the emergency-shelf meal shows something for a first course, the meat or fish, two vegetables and a rel-



WOMEN ENJOY THIS
"BROWSE-AROUND-CORNER"

You'll find this corner handily located just inside the front doorway here at the Providence Gas Company. The display will be changed frequently so come in . . . and browse around for new ideas on canning. We're going to keep it interesting with suggestions, actual samples and helpful charts.

Don't overlook our weekly canning demonstrations . . . held at a handy spot on the first floor . . . just a few steps away from the "browse-around-corner." Three days a week . . . every Tuesday, Wednesday and Thursday . . . from 2:00 to 4:00 o'clock.

You're welcome any time . . . so come in and stay as long . . . or short a time . . . as you like.

The Girl in White

copyright 1944, Providence Gas Co.

ish, and something that can be used for a dessert; the menu is beside the display. The jars inside the cases are one of a kind of different fruits and vegetables and show good packs.

One sign tells about the demonstrations, another states "The Girl in White will help you with your canning problems," another presents the emergency-shelf menu, and the tall poster shows the canning direction sheets and suggests "Ask the Girl in White for your copy." The posters on the background are the Government canning set, the ones most useful at the moment being those on display.

Next to this Browse-Around Corner is the demonstration center, with its equipment and chairs, and next to this is the Home Service Information booth, attended constantly by a Girl in White. If you can't get your information from one place, you can from the other.

New Super Diesel Fuel from Natural Gas

A HIGH cetane diesel fuel which gives promise of having revolutionary effects is now undergoing extensive tests at one of the Bureau of Ships laboratories according to an article in *The Oil and Gas Journal*, August 12.

The tests are being conducted to determine the value of the fuel for combat service both for present and possibly new design Navy engines. The immediate use of the new fuel lies in improving the quality of low cetane fuels and augmenting the present supply of fuel for the many diesel ships in the fleet. Its future possibilities appear to be very promising since it may make 100 cetane fuel practicable

where 50 cetane is now the average for high-quality diesel fuel.

The new high cetane fuel is produced from a fluid obtained by synthesizing natural gas. The quantity of fuel which can be obtained from this source represents only a small fraction of the total fuel production now obtained from natural petroleum. Used as a blend, however, it can have important effects in improving the quality of the present low cetane petroleum fuel and increasing the over-all volume of diesel fuel available for the fleet.

The process by which the fuel is produced requires a minimum of critical alloy steel and will employ catalytic technology developed by the synthetic rubber and aviation gasoline programs. The work, being carried on under the direction of the Research and Standards Branch of the Bureau of Ships, indicates that this process will make a considerable quantity of a valuable war fuel available to aid in relieving the critical shortage of petroleum products.

Toluene Process from Natural Gas

TOLUENE, basic material for TNT (which in chemical longhand is trinitro-toluene) can be made synthetically from two cheap, abundant substances found in oil and natural gas, by a new process on which U. S. patent 2,352,199 has just been issued to Prof. Vladimir N. Ipatieff and George S. Monroe, both of Chicago.

The substances are benzene, which is one of the common light fractions of petroleum, and methane, simplest of the hydrocarbon gases, which is one of the chief constituents of most natural gases and is also produced in quantity in certain petroleum-cracking processes.

In the Ipatieff-Monroe synthesis, benzene and methane are subjected to high pressure, between 50 and 450 atmospheres, at a temperature of from 350 to 750 degrees Centigrade, in the presence of a catalyst. With the toluene, diphenyl is also synthesized; this co-product has a number of industrial uses.—*Science News Letter*, July 8, 1944.



The Browse-Around Corner of the Providence Gas Company

When Our Veterans Return

We want everyone to know what our company plans for the future of all our employees now in our country's forces when they come home.

1. A warm welcome back.
2. We want your position to be as if you hadn't been away.
3. The old job or another as good or better.
4. An effort to utilize to the advantage of the veteran, all ability which may have been "developed."
5. If the veteran is handicapped by reason of war service the best job available to his abilities. Every effort will be made to provide work even if it is temporary, until his condition permits more permanent employment.

The law provides for protection of veterans. It is our wish to meet the spirit and the letter of the law and a little more besides.

August 1, 1944.



The above appeared in the company magazine of The Brooklyn Union Gas Company. Mr. Paige is president of that company and a past president of the American Gas Association

Gas Utility—Atlanta's Oldest Concern—Wins New Honor

THE National Security Award of the United States Office of Civilian Defense was presented to Atlanta Gas Light Company at a gathering of employees and their families, at the Gas Company Service Building in Atlanta, Georgia, on June 29.

Declaring that, "You have guarded



H. Carl Wolf, president, Atlanta Gas Light Company, receiving the National Security Award from Jerome A. Connor, regional director of OCD

against accidents, fire and sabotage; you have prepared for action in the event of enemy attack, and you have taken steps to anticipate all the war emergencies which might have confronted you," Maj. General Frederick E. Uhl, commanding officer, Fourth Service Command, congratulated the company and its employees on their achievements and the spirit with which they had carried out their work.

Jerome A. Connor, regional director of the Office of Civilian Defense, presented the award to H. Carl Wolf, president, on behalf of the OCD, and Mr. Wolf in turn presented token award insignias to selected representatives of the company's plant protection force.

"You have done an outstanding job," Mr. Connor told the employees—"a type of job that has not been exceeded by any plant that I know of in the Southeastern area."

In accepting the award, Mr. Wolf pointed out that with the lighting of 50 gas street lamps in Atlanta on Christmas Day, 1855, the Atlanta Gas Light Company started a service to the community that has suffered only one interruption in the better part of a Century that has passed—and that was following the Battle of Atlanta when Atlanta was burned and the gas plant itself destroyed.

"As Atlanta's oldest corporation," he

said, "what we are proud of in the designation of our company to receive the National Security Award is that it typifies the willingness and real concern of our employees to safeguard our service to our customers."

He paid tribute to the company's personnel for the careful planning through which the company was prepared to meet any emergency that might affect gas service. "The heritage handed down by other generations of loyal gas company employees—that gas service must go on—has become a tradition at the gas company," he declared.

Special guests included representatives from the Office of Civilian Defense and members of the Georgia Public Service Commission. J. H. Motz, secretary of Atlanta Gas Light Company, acted as master of ceremonies.

The Atlanta Gas Light Company was the first concern in Atlanta designated to receive the National Security Award.

Committee To Study Gas Conservation



W. C. Beckjord

A NEW committee of the Natural Gas Department of the American Gas Association has been appointed to study end uses of gas and other problems of fuel conservation. W. C. Beckjord, Columbia Gas & Electric Corp., New York, has been named chairman.

Other members of the committee are: Burt R. Bay, Northern Natural Gas Co., Omaha, Neb.; J. A. Brown, The Commonwealth and Southern Corp., New York; Edward Buddrus, Panhandle Eastern Pipe Line Co., Chicago; E. V. Kesinger, Natural Gas Pipeline Co. of America, Chicago; R. E. Ramsey, New Haven Gas Light Co., New Haven, Conn.; J. French Robinson, The East Ohio Gas Co., Cleveland; Major T. J. Strickler, Kansas City Gas Co., Kansas City; and R. E. Wertz, Amarillo Gas Co., Amarillo, Texas.

A meeting of the committee is scheduled for September 13 in New York City.

Well-Cooked Food Aids War Production

THE largest purveyor of food in the great war production area of Cleveland, Ohio, is Thompson Aircraft Products Company. Its cafeterias, which will seat over 2200 people at one time, are equipped with the latest heavy-duty models of gas ranges, broilers, special short order stoves, etc.

Gas Institute Builds New Research Laboratory

A NEW gasification research laboratory is being built for the Institute of Gas Technology at Illinois Institute of Technology, it has been announced by John I. Yellott, director of the institute.

The new laboratory, which will add 30 percent to the space available for gas industry research, will be ready September 1. Though the structure will be used primarily for gasification research, a portion will be utilized as an addition to the Gas Institute library.

Being constructed and equipped at an approximate cost of \$10,000, the new laboratory bridges the space between the two present buildings of the Gas Institute, making one unit of the entire institute. The new building is a one-story brick structure. Its 1800 square feet of space will accommodate 20 research workers.

For the duration, the Gas Institute is devoting its activities exclusively to research. A change in selective service regulations has brought about a suspension of the educational program of the Institute for the duration.

Chemists To Hear Report on Fuels Progress

PROGRESS in fuels will be reported to the Division of Gas and Fuel Chemistry of the American Chemical Society in New York, Thursday, September 14. Dr. Gilbert Thiessen of Koppers Co., Pittsburgh, chairman of the division, will preside. The sessions will be held in connection with the society's 108th meeting, which will be attended by 7000 chemists and industrialists.

Among those who will address the divisions are: V. I. Komarewsky and C. H.



Portland Gas & Coke Company of Portland, Ore., was one of the first firms west of the Rockies to be presented with the National Security Award for the manner in which it has safeguarded "production, employees and property" by maintaining a "superior standard of protection and security." The presentation was made at a Chamber of Commerce luncheon at which President Paul B. McKee accepted the award in behalf of the company which received high praise for its civilian defense training and cooperation. Major General Robert H. Lewis, commanding general of the Northwest Sector, Western Defense Command, made the presentation. Mayor Earl, who accepted honors for the city of Portland, is seated at the left.

Ries, Institute of Gas Technology, Illinois Institute of Technology, Chicago; F. E. Vandaveer and C. George Segeler, American Gas Association, Cleveland and New York; Guenther Von Elbe, R. E. Brewer and Morris Mentser, U. S. Bureau of Mines, Pittsburgh; H. B. Charnbury, J. W. Eckerd, J. S. LaTorre and C. R. Kinney, Pennsylvania State College; Frank H. Reed, Harold W. Jackman, P. W. Henline and W. F. Wagner and W. C. Tilbury, Illinois Geological Survey.

Build Your Own Food Storage Room

IN support of the national food conservation drive, the home service department of the Minneapolis Gas Light Company, Jeannette Campbell, director, has set up a model storage room display on the company's sales floor. Planned by the county agent who made a drawing and small-scale model, it was built by the company's carpenter and will be on display until October 1.

In the food storage space for canned goods, a label gives the amount of each food to can for each member of the family. As that food is prevalent on the market, the proper number of cans is displayed on the shelf. Until it is canned, the shelf stays empty with just the label. There is one shelf for green and leafy vegetables, one for all other vegetables, one for fruit, and one for tomatoes. A separate set of shelves is set aside for jellies, jams, etc. Shelves are glassed in so canned goods will not disappear.

There is also a box of sand for carrots, beets and rutabagas. Another feature is a grated bottom for potato storage with circulation holes in the panel across the front of the bin. Thermometers are placed in the warmest and coldest parts of the storage room.

The display is particularly interesting to men and one commented: "You can just wrap that up and deliver it." The company gives out a folder of directions for building the storage room which includes the exact cost and list of material needed.



Model storage room display set up on the sales floor of the Minneapolis Gas Light Company. Jeannette Campbell, home service director, is shown at left.

Rules for Awarding McCarter Medals

IN order to facilitate the awarding of the McCarter Medal, Bar, Certificate of Assistance or Certificate of Recognition, more detailed information regarding the points considered by the Subcommittee on Awards in reviewing applications has been prepared by the A.G.A. Accident Prevention Committee. The committee is publishing the following check list which the subcommittee uses in the hope that member companies will take these points into consideration and be guided by them when preparing applications for submission to the Medal Awards Subcommittee.

The present Medal Awards Subcommittee is composed of John M. Orts, director of safety education, Public Service Corporation of New Jersey, Chairman; H. T. Jayne, Philadelphia Gas Works Company, and W. T. Rogers, Industrial Relations Department, Ebasco Services Incorporated, New York. George Ruoff, as chairman of the Accident Prevention Committee, also must approve the application.

Check List

1. For regulations under which a McCarter Medal award is made, check bottom of Page 3 of application.
2. Study the application with the thought in mind that McCarter Medals are awarded primarily for the purpose of encouraging the use of the Prone-Pressure Method of Resuscitation.
3. Applicant must be employed by a member company (either Gas, or Gas and Electric) of the American Gas Association.
4. All applicants eligible under Rule No. 3 will be considered by the committee except members of a special service crew trained in artificial respiration, whose duty it is to render general first aid and employed for emergency purposes exclusively. However, a first aid team, not employed exclusively for emergency purposes having successfully performed artificial respiration as a unit, can apply for the McCarter Medal and the accompanying certificate listing the names of those in the team who perform artificial respiration and who will also receive an individual Certificate of Assistance.
5. "Only manufactured or natural gas distributed through mains by public utility companies" or the products of incomplete combustion of these, are regarded as being within the scope of award.
6. Patient may be breathing slightly and if assisted, would eliminate a possible fatality (opinion given by Dr. Drinker). Usually a patient is "not breathing" and "unconscious". The history of the case as given by supporting statements will usually clear any indecision.
7. The application must be signed and subscribed to before a Notary Public by an official of the employing company.
8. Each application must be accompanied by original signed statements of witnesses, foreman, physician, hospital supt. or companion at time of resuscitation.

These statements need not be witnessed or notarized.

9. No application for the McCarter Medal shall be considered by the committee unless it is received by the American Gas Association within one year after date of resuscitation.

NOTE: The above points, if carefully studied, will ordinarily satisfy members of the committee as to whether award should or should not be made. However, questions may arise that can only be answered by discussion in general committee.

In Select Company

UNFORTUNATELY not many associations seem convinced that "One little ad won't do at all, you've got to keep them going." A.G.A. is in select company, now it has started its ninth consecutive year of cooperative national advertising.

Sales Management last year reported that only 61 associations advertised in the 35 leading magazines; spent \$5,317,000. High year was 1928, when 84 associations spent \$6,558,451. Since 1920 there have been 231 association advertisers in the magazines, but the rash of initial enthusiasm seems to have worn off quickly, as shown by this mortality table:

39 associations advertised 1 year or less;
92 associations advertised 2 to 4 years;
57 associations advertised 5 to 9 years;
22 associations advertised 10 to 14 years;
21 associations advertised 15 years or more.

Cities Service Operates New Pipe Lines

THE Federal Power Commission announced Aug. 1 its order permitting the Cities Service Gas Company, Bartlesville, Oklahoma, to operate until June 30, 1954, the new 231-mile Hugoton natural gas pipeline under lease from the Cities Service Transportation and Chemical Company. The line, which was put into operation this year, extends from the Hugoton field in Texas County to the Gas company's Blackwell station in Kay County, Oklahoma.

In a second order the Commission authorized the Transportation company to build and the gas company to operate for 10 years additional facilities to increase the line's capacity. These include about 43 miles of pipelines to connect 37 new natural gas wells to be drilled in the Hugoton field with the Guymon (Oklahoma) compressor station, seven additional 1000-horsepower gas compressor units to be installed in that station, and related facilities. These facilities, which will increase the Hugoton line's capacity from 140 million cubic feet of natural gas per day to 213 million cubic feet per day, are required to safeguard service to domestic consumers and to essential war industries. The authorization provides that construction shall be completed by December 31, 1944.

CONVENTION CALENDAR

SEPTEMBER

- Sept. 12 Midwest Gas Association, Sectional Meeting
Omaha, Nebr.
- 13-14 Pacific Coast Gas Association, Annual Meeting
Ambassador Hotel, Los Angeles
- 14 American Standards Association, Standards Council
New York, N. Y.
- 22 Maryland Utilities Association, Mid-Year Meeting
Lord Baltimore Hotel, Baltimore, Md.
- 26 New England Gas Association Operating Division
Hotel Statler, Boston, Mass.

OCTOBER

- Oct. 3-5 National Safety Congress
Sherman, Morrison & LaSalle Hotels, Chicago, Ill.
- 5 American Gas Association Annual Meeting
Engineering Societies Building, New York, N. Y.
- 10-12 National Restaurant Association, Convention and Exhibition
Chicago, Ill.
- 16-20 American Society for Metals, Convention and Exhibition
Cleveland, Ohio

NOVEMBER

- Nov. 13-16 National Hotel Association
New York, N. Y.

Personal AND OTHERWISE

Lt. Hargrove Awarded Service Cross

THE Distinguished Service Cross, America's second highest award, has been received by Lt. Robert C. Hargrove, son of R. H. Hargrove, vice-president, United Gas Pipe Line Co., Shreveport. Lt. Hargrove received the decoration for "extraordinary heroism in action, courage, initiative and determined leadership during participation in the initial beachhead assault on D-Day, June 6."

An intelligence officer with an infantry battalion, he was wounded by a sniper bullet six days later and evacuated to a base hospital in England but only after participating in some of the hottest action of the first crucial invasion days.

Lt. Hargrove's father is vice-presidential nominee of the American Gas Association.

Willien Appointed to Gas Institute Staff



Leon J. Willien

LEON J. WILLIEN, nationally known expert on gas, has been appointed associate director of the Institute of Gas Technology at Illinois Institute of Technology, it has been revealed by John I. Yellott, director of the Gas Institute. Mr. Willien has been associated with

the Public Utility Engineering and Service Corporation, Chicago, as a gas engineer since 1937. At present he is also head consultant on manufactured gas for the War Production Board.

Recipient of the American Gas Association's two top awards, Mr. Willien received the Beal medal for the most valuable technical paper read before the Technical Section at the 1927 convention. The paper was on "Developments in Water Gas Operation." Nine years later, in 1936, he received the Charles A. Munroe Award for his contributions to the manufacture, mixing and transmission of gas. He has also been elected an honorary member for life of the Pacific Coast

Gas Association, for making "the most valuable contribution in 1932 to the gas industry on the Pacific coast."

In his new position with the Gas Institute, Mr. Willien will have charge of research in gasification and related fields. Also, he will serve as consultant on water gas generation.

A member of the Managing Committee of the American Gas Association's Technical Section for 12 years, he served one term as its chairman. He has also served as chairman of A. G. A.'s Committees on Disposal of Waste from Gas Plants, Carbonization and Gas Conditioning. Mr. Willien also has been chairman of the gas engineering section of the Western Society of Engineers.

He attended Rose Polytechnic Institute, receiving his bachelor's degree in chemistry in 1906, his master's in chemistry in 1908 and his chemical engineering degree in 1910.

A 49-Year Association Membership Record

AFTER forty-nine years as a member of the American Gas Association and its predecessor organizations, Walton Forstall has discontinued this affiliation. A distinguished pioneer in the gas industry, Mr. Forstall has made many contributions to its progress. He is particularly well known for his "Manual of Gas Distribution," a 1000-page textbook published in 1920 when he was engineer of distribution for The Philadelphia Gas Works Company which is today recognized as the most authoritative work of its kind. He had organized the Philadelphia gas distribution department in 1898.

Kohlhepp Advanced

CHARLES E. KOHLHEPP, vice-president and controller of the Wisconsin Public Service Corporation since 1938, has been named general manager, in addition to his duties as vice-president. Mr. Kohlhepp will assume duties formerly assigned to J. P. Pulliam, who will continue an active interest in company affairs in his position as president and as a member of the board of directors.

At the same time, H. P. Taylor, treasurer of the company, was made vice-president and treasurer.

New Electric Power and United Gas Officers

AS this issue of the A. G. A. MONTHLY goes to press announcement has been made that E. H. Dixon has been elected president of the Electric Power and Light Corporation, and N. C. McGowen has been made president of the United Gas Corporation, an important Electric Power subsidiary.

P. O. Canaday has been elected treasurer of Electric Power and Light and R. H. Hargrove made vice-president of United Gas. A. B. Paterson of New Orleans, president of the New Orleans Public Service Inc., has been elected a director of both companies. W. T. Wynn of Greenville, Miss., and C. J. Savoie of Belle Rose, La., have been elected directors of United Gas.

Prior to his new appointment, Mr. Dixon had been executive vice-president of Electric Power and Light. Mr. McGowen, whose headquarters are in Shreveport, has been president of the principal subsidiaries of United Gas for many years. He is a past president of the American Gas Association. Mr. Hargrove has been nominated for vice-president of the American Gas Association.

Heads British Gas Group

S. E. WHITEHEAD, Southampton Gas S. Company, Southampton, England, is now president of The Institution of Gas Engineers, succeeding James Jamieson.

Tracy Appointed Chief of OWU Materials Section

EDWARD FALCK, director of the Office of War Utilities of the War Production Board, has announced as of August 12, 1944, that Frederick B. Tracy, formerly deputy chief of the Gas Materials Distribution Section, has been appointed chief of the same section to fill the vacancy created by the resignation of George H. Smith. Mr. Smith resigned to become director of the Natural Gas Department of the American Gas Association.

Since July, 1942, Mr. Tracy has been associated with the Materials Section of the Office of War Utilities.

Prior to his Washington connection he was associated with gas properties owned and operated by the Dawes Brothers of Chicago, until 1929 at which time the properties were sold to the Central Public Service Company. Since that time Mr. Tracy has been associated with North American Company properties in Nebraska and Illinois, going to Washington from the Illinois Power Company Division office at Galesburg, Illinois.

To Promote Gas Air Conditioning



H. C. Jamerson

JOHN K. KNIGHTON, sales manager of the gas air conditioning division, Servel Inc., Evansville, Ind., has announced the appointment of H. C. Jamerson to the staff of the division.

Mr. Jamerson, who has been out of the air conditioning field for several years, was formerly sales manager of the Airtemp Division of Chrysler Corporation. He was also advertising and sales promotion manager for the DeSoto Division of Chrysler.

His other connection with the refrigeration industry is with Frigidaire as sales manager in charge of product distribution. Mr. Jamerson is a native of St. Louis and a graduate of Harvard in the class of 1915.

In his new position with Servel in the duration period he will be in charge of the coordination of the gas air conditioning sales story and creating a salesmen training program for the new product.

Mrs. Evans Elected

MRS. ALTA EWALT EVANS, editor of *Southern Union Gas News*, company magazine of the Southern Union Gas Company, Dallas, Texas, was elected president of the National Council of Industrial Editors at the recent annual meeting of that organization. Among five vice-presidents named was Charles J. Morse, The Peoples Gas Light & Coke Co., Chicago.

Schade Joins Servel



Gilbert Schade

GILBERT SCHADE has recently been appointed to the staff of the Advertising and Sales Promotion Department of Servel Inc., according to R. J. Canniff, advertising and sales promotion manager.

Mr. Schade, who was employed by Pratt & Whitney Division of United Aircraft, served 5 years as sales promotion manager with the Silex Coffee-maker Company. He was also with the John B. Fairbairn agency of Hartford, and for two and one-half years was on the sales promotion staff for the Hartford Steel Ball Company.

He attended Rutgers University in New Brunswick, N. J.



Lieutenant Gladys Price

Directs WAVE Activities at Large Air Station

RESPONSIBILITY for the WAVES at one of the largest of the Naval Air Stations, that at Jacksonville, Florida, rests with Lieutenant Gladys Price, W-V(S), USNR. As WAVES Administrative Officer, she directs activities of the hundreds of Navy girls who work throughout the air base in regular assignments as "mechs," storekeepers, yeomen, control tower operators, link trainer instructors, aerographer's mates, and eight

other ratings, filling as great a variety of assignments as there are Navy billets ashore.

For ten years prior to the war Miss Price was with the Southern California Gas Company as home service supervisor, directing a department of twenty college-trained home economists in sales promotion. During that time she was Chairman of the Home Service Committee for the American Gas Association, as well as home service chairman for the Pacific Coast Association.

Having enlisted in November, 1942, Miss Price was in the third class at the Naval Reserve Midshipmen's School, Northampton, Massachusetts. From the indoctrination course she was graduated with the rank of Lieutenant (junior grade), and received a promotion to full Lieutenant in January, 1944.

Doherty Honored

CORNELIUS DOHERTY, employee of the Eastern Gas and Fuel Associates, Everett, Mass., was recently awarded a McCarter medal and certificate for performing an outstanding act of life saving. The award was made by the American Gas Association upon recommendation of the Accident Prevention Committee.

Presentation of the medal was made by E. W. Zimmerman, superintendent, at a meeting of the Safety Committee and company department heads.

Wins McCarter Medal Second Time



Pictured here is James F. Burns, refrigeration supervisor, Kings County Lighting Company, Brooklyn (second from right) receiving his second McCarter medal and certificate from Andrew J. Gonnoud, president of the company. Left to right are Clarence J. Ferdon, secretary, Kings County Lighting Co.; Harold J. Jessup, chief clerk, distribution department; Mr. Burns and Mr. Gonnoud. Another two-time winner, Mr. Jessup, is being presented with a McCarter certificate of assistance. Both men were honored for saving the life of a woman by application of the Schafer prone pressure method of resuscitation. Awards are made by the American Gas Association upon recommendation of the Accident Prevention Committee.

Heads Peoples Gas Home Service

ELIZABETH J. LYNAN is the new home service director of The Peoples Gas Light and Coke Co., as of July 13, according to an announcement by B. H. Wittmann, manager of the domestic sales department. She succeeds Karen Fladoes who recently resigned to become director of home economics, Nash Kelvinator Corp., Detroit, Mich.

In her new position, Miss Lynan will be known to the public as Martha Holmes, the company's name for its home service director. At the time of her promotion she was supervisor of the south section of the home service department. She has been with the company for nearly 10 years.

Joins University of Oklahoma Staff



George F. Russell

DR. R. L. HUNTINGTON, chairman of the School of Chemical Engineering at the University of Oklahoma, announces the recent appointment of George F. Russell as assistant professor on the chemical engineering staff.

Before going to the University, Mr. Russell had been connected with the Phillips Petroleum Company's natural gasoline division for a period of five years. Mr. Russell has done considerable research on problems pertaining to fractionation of petroleum and the dehydration of natural gas. At present he is continuing research in these two engineering fields.

Kaiser Directs Soft Coal Research

BITUMINOUS COAL RESEARCH, INC. has announced the appointment of Elmer R. Kaiser as assistant director of research for the bituminous coal industry's expanded technical program. Mr. Kaiser will be located in the new Pittsburgh office of Bituminous Coal Research, Inc., 719 Oliver Building, Pittsburgh 22, Pa., where Dr. H. J. Rose, the recently-appointed director of research, has already established headquarters.

A graduate of the University of Wisconsin, from which he received his bachelor's and master's degrees in mechanical engineering in 1934 and 1935, respectively, Mr. Kaiser has been engaged in coal research since 1932. He has been associated with the coal industry's research program since 1935 as a research engineer on the staff of Battelle Memorial Institute.



Major Houlgate

Houlgate Advanced

CARROLL E. (DEKE) HOULGATE, public relations representative of Southern California Gas Company now serving in the Army Air Forces, recently was promoted to the rank of major. Major Houlgate is assigned to AAF Western Flying Training Command headquarters as chief of the public relations section.

He is widely known in the gas industry for his work as contact man for the American Gas Association in Hollywood where he was instrumental in fostering the appearance of gas appliances in modern motion picture settings.

A noted football authority, for four years Major Houlgate published and edited the "Football Form and Digest."

Spaulding Is Major

PROMOTION of John S. Spaulding from captain to major was announced recently by the Army Air Corps. Prior to joining the service in September 1942, Major Spaulding was advertising manager of Southern California Gas Company, Los Angeles. He was also chairman of the Copy Subcommittee of the A. G. A. National Advertising Committee.

A veteran aviator of the last war, Major Spaulding was assigned to the Army Air Corps Gunnery School at Las Vegas. He is now stationed at Omaha, Nebraska.

Espy in Pittsburgh

CRAIG ESPY, formerly vice-president of Western Business Papers, Inc., in charge of the Dallas office, is now manager of the Cleveland-Pittsburgh territory of *The Oil and Gas Journal* with headquarters at 704 Grant Building, Pittsburgh 19, Pa.

He also represents the magazine, *Petroleum Interamericano*.

Miss Severson Home Service Director

ANNOUNCEMENT that Ruth Miriam Severson, who has been home economist for the Iroquois Gas Co., Buffalo, N. Y., and the Kansas City (Mo.) Gas Co., has been engaged as home service supervisor for Peoples Natural Gas Co., Pittsburgh, Pa., was made recently by Christy Payne, Jr., sales manager of the company. Miss Severson succeeds Mrs. Lemabel Parry, who for more than a year has headed the home service department of Peoples. Mrs. Parry has taken up her residence in Buffalo, N. Y., joining her family who recently moved to that city.

"Cap" Higgins Commands Army Air Post

A. E. (CAP) HIGGINS was recently advanced from Major to Lieutenant-Colonel and placed in command of the Army Air Post at Palm Springs, California. Lt. Col. Higgins is vice-president of Pittsburgh Equitable Meter Company in peacetime. He was formerly secretary of the Natural Gas Department of the American Gas Association.

Honorary Member

THE Institution of Gas Engineers has elected Ernest R. Acker, president of the American Gas Association, to honorary membership during his term of office.

New Lone Star Home Economics Director



Julia Hunter

JULIA HUNTER has been appointed home economics director of Lone Star Gas Company, Dallas, Texas, succeeding Albertine Berry, who resigned July 11, Will C. Grant, advertising director, has announced. Miss Berry resigned to accept a position as director of home economics

for the Interstate Cotton Oil Refining Company at Sherman, Texas. She will create a new department in the Sherman company.

Miss Hunter has been assistant home economics director for Lone Star Gas Company. She is a graduate of Texas State College for Women, Denton, Texas. Her first experience with the company was as home economist in the Galveston Division office.

Miss Berry was chairman of the Home Service Committee of the American Gas Association during 1940-41, and is widely known throughout the gas industry.

Pacific Coast Gas Annual Meeting



E. L. Payne

THE fifty-first annual meeting of the Pacific Coast Gas Association will be held at the Ambassador Hotel, Los Angeles, September 13 and 14. Theme of the meeting will be "The Gas Business" and discussions will cover contributions to the war effort, research, customer and employee relations, and postwar plans. A complete program is being mailed late in August to all P.C.G.A. members.

The annual meeting of the Manufacturers' Section will be held Wednesday morning, followed by a luncheon and general session. The annual dinner will take place that evening. Thursday's program includes a home service breakfast and general session in the morning, followed by a luncheon and general session. Parallel sessions of the Accounting, Sales & Advertising, Technical and

Home Service sections will be held in the afternoon.

O. R. Doerr, general sales manager, Pacific Gas and Electric Co., has been named by the Nominating Committee to succeed E. L. Payne as president. H. W. Edmund, vice-president and general manager, Coast Counties Gas and Electric Co., has been selected for vice-president and D. G. Martin, general auditor, Pacific Gas and Electric Co., is slated for treasurer. Nominees for directors are: F. M. Banks, R. G. Barnett, N. Henry Gellert, and E. T. Howard. Election will be held during the annual meeting.

Maryland Utilities Association

THE mid year meeting of the Maryland Utilities Association will be held on September 22 at the Lord Baltimore Hotel, Baltimore, Maryland.

The session will start with a luncheon at 12:30, followed by three addresses in the afternoon upon subjects of current importance to gas, electric, and transportation utilities.

A dinner meeting in the evening will be followed by a speaker of national prominence.

Gas Program at National Safety Congress

THE public utilities section of the National Safety Congress will sponsor a gas industry program Thursday afternoon, October 5, under the chairmanship of E. S. Miner. The Congress will take place October 3-5 at the Sherman, Morrison and LaSalle Hotels, Chicago.

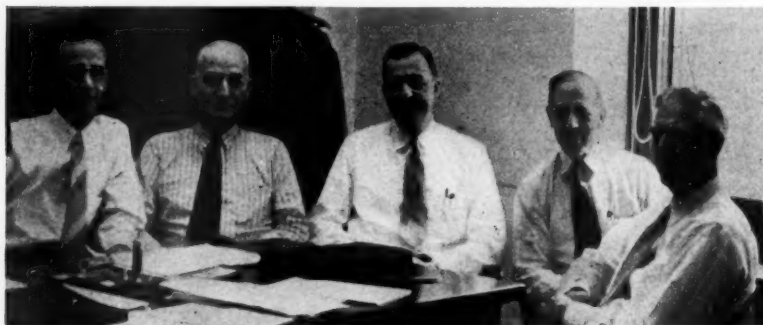
Featured speakers will be George J. Ruoff, of Poughkeepsie, chairman of the A. G. A. Accident Prevention Committee, and D. E. Herringshaw, general supervisor in charge of gas operations, engineering and construction, Consumers Power Co., Jackson, Mich. Mr. Ruoff will discuss "General Safety Problems and Progress in the Gas Industry" and Mr. Herringshaw's topic is "The Relation of Safety Practices to the Gas Leak Survey."

Mid-West Regional Gas Meeting

THE second in a series of four one day sectional meetings sponsored by the Mid-West Gas Association will be held Tuesday, September 12, at the Hotel Fontenelle, Omaha, Neb., according to an announcement by R. B. Searing, secretary-treasurer. The meeting will open with a general session at 10:00 A.M. Separate luncheons, one for operating men, another for salesmen and accountants, will be followed by separate discussion meetings in the afternoon.

The committee in charge includes J. E. Walsh, M. K. Wrench, and Larry Shomaker.

Ebasco Plans Personnel Program



Ebasco committee meeting at 2 Rector Street, New York, to arrange for Chicago conferences. Left to right are: M. B. McDonald, secretary, Florida Power & Light Company; C. W. Miller, safety superintendent, The Washington Water Power Company; W. H. Senyard, director of personnel, Louisiana Power & Light Company; R. E. Walter, safety director, Nebraska Power Company; W. T. Rogers, industrial relations department, Ebasco Services Incorporated

A COMMITTEE of representatives of companies in the Electric Bond and Share group met at 2 Rector Street, New York, June 19, 20 and 21, to plan for their annual safety and personnel meetings which are held at the time of the National Safety Congress.

The program, which was worked out after contact with companies in this utility system with operations in some thirty states and several foreign countries, will include special consideration to problems

of the returning serviceman, foreman training and employee education. Special group discussions have been arranged in various fields of operation such as electric, gas and transportation.

Speakers will include company executives, and a feature of the conference will be the Ebasco luncheon which will be held on Wednesday of the week of the Congress. All meetings will be in the La Salle Hotel in Chicago during the week beginning October 1.

Hope Superintendent Dies Suddenly

CHARLES CORNWALL REED, general superintendent of the Hope Natural Gas Company, Clarksburg, W. Va., died August 20 following a heart attack. He was 59 years of age.

Mr. Reed had been in the employ of the Hope company since September 27, 1910, the year he went to Clarksburg, as assistant superintendent of the meter and gasoline department. On January 1, 1920, he was appointed superintendent of the gasoline department for the Hope Construction and Refining Company and served in that position until he was made assistant general superintendent of the entire Hope company.

While serving with the Hope Construction and Refining, he directed much of the pioneer work in the development and perfection of the absorption method of gasoline extraction from natural gas.

In October of 1938, Mr. Reed became general superintendent of the Hope and a director of the company and its affiliates. He succeeded Wallace B. Gribble in that office upon Mr. Gribble's retirement.



Accounting SECTION

O. H. RITENOUR, Chairman

C. E. PACKMAN, Vice-Chairman

O. W. BREWER, Secretary

The Advantages of Standard Practice Manuals

THE need for and the advantage of having Standard Practice Instructions have long been recognized by executive management. Undoubtedly, every organization has established definite routines which are intended to guide the employees in their work, but many such procedures are the result of memorandums written by division or department heads and addressed to their subordinate supervisors only. Therefore, it is not unusual to have any memorandum become just another piece of paper once the supervisors have informed their respective groups verbally as to the contents. Very likely, the memorandum will then be filed in some haphazard manner or eventually will be lost.

Consequently, new employees are dependent upon their supervisor or one of his experienced employees for instructions in learning their duties. This period of orientation may be a difficult one for both the new employee and supervisor or the person designated by him, for the latter, though a capable employee, may be a poor teacher.

Help for New Employees

How much easier if there had been Standard Practice Instructions available, properly written, describing this particular employee's work. Then, again, since these memorandums were probably confined exclusively to the division or department, their entire effectiveness is not realized in so far as the Internal Auditing Department is concerned, for they probably never received them. Obviously, Standard Practice Instructions are considered an absolute necessity by them. If the company has a definite training program with special instructors, the benefits of such instructions will be found to be of immeasurable value.

It is not unusual for certain existing unwritten practices to result from an employee's past experience with his job and his own initiative. The attitude of his superior might be "Well, as long as I get the facts and figures by the time specified, what difference does it make as to what system is used." Those adherents of Standard Practice Instructions will insist that only through the use of published routines, which have resulted from an intensive study and possibly a revision of the existing practice, can the management feel confident that the company's activities are being well regulated.

Presented at Gas and Electric Industry Accounting Conference, Cleveland, April 25-27, 1944.

By OTTO PRICE

*Boston Consolidated Gas Company,
Boston, Mass.*

Furthermore, the Internal Auditor's report will disclose any deviations from these routines.

Employees should be encouraged to submit their suggestions to the management whenever they believe they have a method whereby an improvement in the present routine will be accomplished. Cash awards paid to the employees, if their suggestions are accepted, definitely are an incentive for further thought and interest with resultant benefit to the company. Publishing the names of those who have received awards in the company's periodic bulletin or magazine has a desirable effect also.

A new employee's attitude toward the company and his job depends a great deal upon his first impressions. Assuming that the individual is eager to learn his duties and do his job well, isn't it disconcerting to him if he becomes confused while trying to absorb considerable verbal instructions given by an experienced employee who knows the work thoroughly but lacks the ability to impart this knowledge to others? Therefore, having Standard Practice Instructions is an assurance that the new employee will understand more readily the duties of his job and its importance toward others. It is also reasonable to assume that the company's cost for training these inexperienced employees will be reduced considerably.

Part of Internal Auditing Program

Standard Practice Instructions are significant to the Public Accountant, for he realizes that they are an integral part of the Internal Auditing Program, which influences the extent of his independent audit. Usually, these instructions have been sent to him at the time they were published and, having read them, acquaints him with the detailed routines affecting the accounts which he will audit. For example, a Standard Practice Instruction governing the handling of incoming mail and the bank deposit of the cash received therein will have a direct bearing on his audit of cash.

Standard Practice Instructions serve also as a management control. These instructions having received executive approval become the Internal Auditing Department's interest

and responsibility. Consequently, during the course of the periodic audits the Internal Auditor will determine whether or not there is strict adherence to the routines established and make his report accordingly to the management. Standard Practice Instructions are especially effective whenever several operating companies' financial facts and figures are consolidated. It is important that each individual company follow the same routines thereby providing uniformity throughout the system. Therefore, having standard forms entails, necessarily, standard instructions regarding their use.

Substantial savings both in time and money have resulted from the revision of existing routines in connection with the use of Standard Practice Instructions.

Employees who contact the public, especially Application Clerks, create a good impression when they have received the benefits of Standard Practice Instructions because they are then entirely familiar with the required duties of their job and act accordingly. Consequently, the company has improved its customer relationship which is, of course, important.

Routine for Preparation

Having spoken of the need for Standard Practice Instructions, because of their many advantages, it is now my purpose to present a suggested routine for their preparation.

A committee comprised of representative men throughout the company appointed to study and review existing procedures is a step in the right direction. Their resultant comprehensive report to the management will then establish the policy to be followed. It is my opinion that Routines, General Orders, and Statements of Policy, and their revisions should be prepared along the following manner:

1. This work should be delegated to a well qualified individual, for the effectiveness of Standard Practice Instructions depends upon the manner of its presentation to those concerned if the proposed practices to be established or revised are to accomplish the desired results. The instructions should be written clearly, thereby precluding any opportunity for misinterpretation. Also, the instructions should not involve any complicated handling, and standard forms used in connection therewith must be as simple as possible.
2. Standard Practice Instructions should be prepared under the supervision of the previously mentioned individual work-

ing in close contact with the supervisors of the various divisions or departments affected.

3. The purpose or objective of the procedure and the instructions which follow should each have an appropriate caption. Further subdivisions under these captions should be lettered then numbered and so spaced to permit easy reading. It is essential that the duties of each department, division, section and group be specified clearly under their respective captions in writing the procedure. This is quite important if the proposed practice involves many of them.
4. When the work reaches its final stage, it is recommended that the proposed instructions be typewritten on standard size punched paper, 8½" x 11". This paper should have printed headings setting forth the title such as "Standard Practice Instructions", and provide for the Subject, Serial Number, Date Effective, and what it may supersede.
5. Having obtained the approval of each superintendent, if more than one division or department is involved, the instructions then should be submitted to the company's executives for their consideration and acceptance.
6. When the proposed Standard Practice Instructions are approved finally by the executives, each division and department head and other interested persons should ascertain, and indicate the number of copies needed by them on a form provided. Then the instructions should receive a serial number assigned by the person designated who is responsible for their filing.
7. Mimeographing is the usual means of publication after which the desired number of copies can be distributed and filed in binders.
8. It is advisable to file these instructions alphabetically by subject and by serial number.
9. The original approved copy of the instructions and any surplus mimeographed ones may be placed in a master file, and cross-indexed with a card reference file.

War Accentuates Need

The need for Standard Practice Instructions today is more pronounced than ever due to the personnel problems brought on by the war. There have been numerous replacements which in many instances have necessitated training new employees and rearranging the work of others. Every effort has been made to seek economies in operating costs and an organization alert to possible savings is likely to realize them.

Each company represented here has Standard Practice Instructions in some form or another. Their importance cannot be overemphasized. Standard Practice Instructions should be reviewed periodically to determine if the method provided for doing the work can be improved or if present conditions necessitate a revision. Make sure that your Internal Auditing Department is fully equipped to do their job and finally give your employees the incentive to do good intelligent work and the opportunity to gain recognition through constructive suggestions. The majority of employees are con-

scientious workers when they understand clearly their prescribed duties and when urged to submit productive ideas, both the company and the employees benefit thereby.

SUMMARY

The advantages of Standard Practice Manuals may be briefly summarized as follows:

1. Serves as a textbook for the new employee
2. Shortens the training period for new employees, thereby reducing training costs
3. Established procedures are subject to periodic audit by company auditors and non-conformance disclosed
4. Provides independent auditors with definite information as to company's practices
5. Manuals may be used as a reference book by supervisory force
6. Management assured of efficient organization, through adoption of standard, accepted routines
7. Procedures may be revised periodically and systematically, with a minimum of confusion
8. Procedures should cover operations of all departments
9. Provides standard routines where several independent companies are operating as a system
10. Customers are assured uniform treatment regardless of location in system

Appointed General Purchasing Agent



Russell C. Wenz

RUSSELL C. WENZ has been appointed general purchasing agent of the Philadelphia Company and subsidiary companies of Pittsburgh, and for the Trustees of Pittsburgh Railways and Pittsburgh Motor Coach System. He succeeds Walter H. Arras, who retired after forty-four years of service with the utility organization, effective August 1.

Mr. Wenz went to Pittsburgh as assistant purchasing agent of the Philadelphia Company and subsidiary companies on May 1, 1939. In March 1943, he was appointed regional utility engineer for the War Production Board, and in January 1944, he became consultant, inventory control, Office of War Utilities, while continuing to serve with the Philadelphia Company. He is also eastern vice-chairman of the Public Utility Buyers Group, National Association of Purchasing Agents.

Mr. Arras entered the service of the Equitable Gas Company in 1900 as a

stenographer. He later became chief clerk, Equitable Gas Company, assistant general purchasing agent for the Philadelphia Company and subsidiary companies, and in 1941 he was made general purchasing agent.

Natural Gas Group States Policy

TWO resolutions of fundamental policy were adopted by the board of directors of the Independent Natural Gas Association at a meeting Aug. 1 in Tulsa, Charles L. Orr, acting secretary, announced.

First was expressed the definite opinion of the Association "that the regulation of the production, gathering and conservation of natural gas is the function of the respective producing states and not of any Federal agency."

The other resolution put the Association on record as favoring "the extension of natural gas pipe line facilities which will afford adequate markets for producers and meet the expanding demands of consumers," and as opposing "any limitation on the industrial use of natural gas."

A committee composed of E. Buddrus, of Chicago, president of the Association, W. H. Wildes, of Dallas, and Mark H. Adams, of Wichita, Kansas, was appointed to represent the Association before the Interstate Oil Compact Commission in an advisory capacity. This action was taken in response to a resolution of the Compact Commission inviting such associations to participate in its proceedings.

The Association has opened a mid-continent office in Oklahoma City.

George Barker Dies

GEORGE BARKER, vice-president in charge of real estate and purchases and a director of the Public Service Corporation of New Jersey, died Aug. 23. His age was 68.

Mr. Barker was born in Baltimore. He was a vice-president and director of the Public Service Electric and Gas Company and of the Public Service Coordinated Transport.

Mr. Barker went to Newark in 1898. He was first employed by the Prudential Insurance Company and later by the Fidelity Union Trust Company.

In 1903, when the Newark Consolidated Gas Company was amalgamated with the Public Service Corporation, he was its secretary-treasurer. In 1905 he became real estate agent for the Public Service Corporation, and on April 28, 1925, he was made a vice-president.

He leaves a widow, Mrs. Mariana Higbie Barker; three sons, George, James and John; a daughter, Mrs. Watson Tait, Jr., and a sister, Mrs. Madeleine McCarter, wife of Thomas N. McCarter, chairman of the board of the Public Service Corporation.



Residential SECTION

C. V. SORENSON, *Chairman*

J. H. WARDEN, *Vice-Chairman*

J. W. WEST, JR., *Secretary*

The Job Ahead for Salesmen



B. T. Franck

THE measure of your influence in shaping things to come is observable from a tabulation of postwar buying preferences. In a recent Fortune nation-wide survey conducted by Elmo Roper, he tendered the following question to all groups: What one or two things do you plan to buy first when times are peaceful again? 21% of all people interviewed wanted an automobile but 13.3% expressed a preference for a house.

Reflect upon this but a moment. If it were to come about that this desire could be fulfilled within a reasonable time, most of our postwar problems would be solved. New homes for 13.3% of the nation's families would require 4,700,000 units. The largest number of homes built in one year were the 937,000 built in 1925. Possibly this urge for homes can be best visualized on a local level. The top building figure for Milwaukee occurred in 1928 when 7,225 dwelling units were erected. If the nation-wide figure holds true for Milwaukee, 26,000 new homes are desired in Milwaukee—almost four times the number built during the year of greatest home construction.

Tremendous Building Effort

On a national basis, to build only one third the number of homes desired in one year would require an effort almost double that of the greatest previous year. But if one third could be built each year for the first three years following the war, many of the irksome problems that plague us now would disappear in thin air. We would no longer need to feel concerned about finding work for our returning soldiers; our war-built plants would be humming with the production of building supplies, plumbing, hardware, appliances, fixtures, furnaces, etc.

Those boys on the battlefronts are coming back in droves—and soon, we hope. They will have changed in many respects. One outstanding change will be that love of country will have dispelled the irreverence engendered by the depression. They will have learned the hard way how good "home" really is.

- Herewith is a digest of an address presented before the Milwaukee Real Estate Board on April 11, 1944. It contains some stimulating suggestions concerning the maintenance of urban property which may prove useful to many gas companies.
- Following its presentation, Mr. Franck, in July, released "A Plan for Residential Building in Milwaukee," which has gained considerable civic and newspaper editorial support. An outline of the plan is reproduced here.

By B. T. FRANCK

*Vice-President, Milwaukee Gas
Light Co.
Milwaukee Real Estate Board,
April 11, 1944*

This yearning for a home is not entirely emotional. Many people are doing something substantial toward it by investing money in War Bonds. The men in service are buying War Bonds. They are sending home part of their pay, both directly and in allotments. Much of this is being saved faithfully for them. These men have left sweethearts and wives behind them. When they return they will want homes, and they will get homes,—if you do your part of the job, and do it right—because they will have savings and they will have jobs.

At first blush the picture glows with promise; yet closer scrutiny reveals it is not unblemished. While 13.3% of our families would, above all else, like to build a new home, there is a vast disparity between wishing and doing. There are too many detours along the way. Moreover, expert opinion is emphatic in that it is an impossibility to organize the building industry to produce 4,700,000 housing units of any kind, in any year. I saw a statement recently that many housing authorities estimate the annual production of housing units, for a decade after the war, at one million. Observe, if you please, how close that comes to the best previous year to which I have already referred, namely 937,000 in 1925.

In view of what I just said, I am willing to concede for our territory any number of dwelling units not to exceed 10,000 per year. For how many years, postwar, I do not know. I make this assertion in full realization that someone armed with an abundance

of statistics and seemingly logical arguments can convince you that I am either too high or too low.

Yet, even with the blemishes, the picture is attractive, depending upon what you do. I believe that no one can reasonably and, therefore, successfully dispute the fact that the trend of two phases of our subject depends mainly upon you of the real estate profession. Their importance, as I enumerate them, is self-evident.

1. HOW MANY dwelling units will be erected in our community; and
2. WHERE will these dwelling units be erected?

The 13.3% which now express a desire for home ownership are your prime market. However, and mark this, this group is more vulnerable to diversion than most other groups because the establishing of a home usually entails toil and sweat, self-denial and perseverance. That 13.3% are being worked on now by every other enterprise, worthy and unworthy, which has something to sell, now and postwar. The urge for fine feathers and other self-indulgences will substantially whittle down your 13.3% unless you protect your interest. In doing so, you simultaneously perform a public service; so start right now if you have not already done so.

Community Planning Project

A highly commendable move has been made in this direction within the past few weeks. However, the project is too big to be identified with any one company or small group. I have the temerity to suggest that, under the leadership of the Milwaukee Real Estate Board, home ownership should be broadened into a comprehensive civic movement. Then, those of us who have a collateral interest should support it to the best of our ability and resources.

I venture to say, too, that this program should be furthered at the same time with some good, old-fashioned leg work by the realtors. You have to see people to get results. These young wives and sweethearts to whom I referred before should be marked out and made specific targets for your bombardment. Sharpshooting at "hot prospects" will be an inevitable refinement.

The ingenuity, diligence, consistency and extent to which you apply yourselves to this task will determine, largely, HOW MANY dwelling units will be erected in our locale

when wartime building restrictions are lifted.

Gentlemen, what I have just said, as I see it, portrays one half of "The Job Ahead for Salesmen" in the realty field.

The second half of "The Job Ahead for Salesmen" is equally engaging and equally urgent. It will provide equal satisfaction and equal pride in accomplishment when it is successfully consummated. I refer to item 2 which I mentioned previously when I stated that WHERE dwelling units will be erected in our community will depend mainly upon you of the real estate profession.

In order to orient ourselves, let me review briefly a few facts with which most of you are familiar. Recently I read a publication on the decentralizing of cities. It described how communities were determined in size by available transportation facilities. As we progressed from the horse and buggy to the automobile, in general, the practical area of a city increased in size sixty fold, while its population increased nowhere nearly as much.

Urban Depopulation

One of the results has been that large, central, urban areas have been depopulated and have deteriorated to the point where they are civic liabilities, not only aesthetically but also economically. In addition to creating other evils these blighted areas necessitate heavy, discriminatory taxes on other central property, as do the outerfringes of a community. Incidentally, these outerfringes usually are the direct consequence of decentralization.

Recently I read an article to the effect that city planning to offset decentralization must be something big and it recommended nothing less than the razing and rebuilding of vast areas. The result of such an approach, it seems to me, usually is a grandiose plan which dies of its own weight or encourages a raid on the Federal Treasury.

Ignoring the complications of slum clearance and housing for the needy, which I concede to be problems but which I do not intend to discuss now, rehabilitation of urban housing seems to me a sound, sensible approach to arresting decentralization.

In industry it is common practice to build a "pilot" plant—a miniature operating facsimile of the ultimate plant. When the bugs are ironed out of the "pilot", and it works, then the big project is undertaken. In line with this procedure I offer for your consideration the rough outline of a plan for checking further disintegration and, perhaps, reversing the trend.

Where I live on North Prospect Avenue, house after house in its dilapidated splendor bespeaks the glamour of what was once Old Milwaukee. These houses are going down and down and down. Each one affords an opportunity for conversion into modern, multiple dwelling units, automatically equipped. (That's the only commercial plug for my business I'll put in.) Where else can you get so fine an environment with its impressive, stately trees, shaded walks, lake view

and proximity to down town? Doomed to an ignominious end without a guiding hand, must we let events take their course?

In my travels around the city I have driven through a number of sections which, if no corrective steps are taken, will in a few years sink to the level of our least desirable areas. Returning from one of these trips I discussed an idea with some of my business associates. We think it has possibilities.

In all of these places there are houses which are architecturally correct, structurally sound; but they require internal modernization and external dressing-up. I proposed to my colleagues that when the time is opportune, if we do go in for model houses, let us take a few structures like those I just described and put them on their feet, so to speak, rather than go out into the country to help launch new subdivisions. While some areas require "block buster" treatment, others need only thinning out and fixing up.

Now, if our idea caught hold it might inspire the fellow next door or across the street to go out and do likewise. There is that possibility. But think, if you will, what could be accomplished if this program had the active support of our city officials, banks, insurance companies, building and loans, the newspapers, and other businesses which

have a direct interest. Instead of a few salesmen, we would have at least several hundred and they would leave their mark. I predict that determined zeal, bordering on the fanatical, capably directed by the Milwaukee Real Estate Board, in a few, short, post-war years would accomplish miracles.

Yes, gentlemen, in your hands, as salesmen, lies the power to determine not only HOW MANY dwelling units will be built, postwar, but also WHERE they will be built.

To conclude, I would like to explain that my assignment was broad. "The Job Ahead for Salesmen" is a title which affords much latitude. If you expected me to talk on what makes a salesman and how to sell I could not do so because I do not know. In my experience as sales manager in natural gas territories and elsewhere, I have hired hundreds of salesmen. The good ones were as different from one another as the two poles. I do know, however, that for successful selling there are three fundamentals; everything starts from them.

1. Have a good product.
2. Know more about it than the person you are trying to sell it to.
3. WORK AT YOUR JOB.

A Plan for Residential Building in Milwaukee

Preamble

Residential development on the outskirts of a community, beyond corporate limits and into rural areas, frequently occurs without adequate consideration having been given to the utilization of available land and structures within the community even though this land and these structures may or could possess all of the merits of outskirt land and many other advantages as well. If emphasis is given only to residential development in the outskirts, and beyond, the overall result may be a lowering of the housing of the community rather than an improvement because the older structures and older districts, through oversight and indifference, may quickly decline to blighted areas.

Moreover, to the extent that the residential development in the outskirts is unwarranted and unnecessary because available land and structures in the urban zone would be utilized, such outskirt development is an economic waste productive of burdensome taxation, excessive capital investment and high operating costs both to government and private interests.

The incidents which are associated with unjustified outskirt development adversely affect local government, industry, retail business, public utilities, property owners, and churches. If measures are not taken to cause a proper balance between outskirt development and urban development and

improvement, the result will be undesirable from a social, political, taxation and economic standpoint.

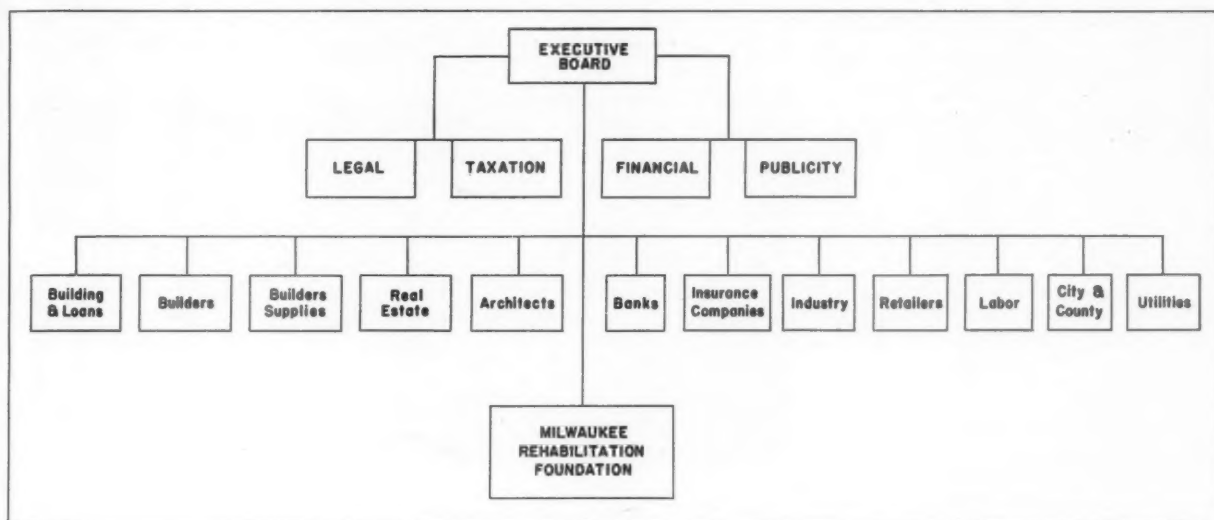
Objective

The development of the modern urban community has two aspects: (1) expansion into new territory; (2) the utilization, maintenance and improvement of the lands and structures within the urban area. The objective of this organization shall be to insure that the proper emphasis be placed upon the latter aspect so that the development of our urban communities may be balanced and economic.

Program

The program of this organization shall be to:

1. Publicize the advantages of living in urban communities having established facilities and services.
2. Formulate and promote a plan of taxation favorable to the construction of dwellings in urban communities.
3. Institute and support a movement among real estate operators, builders and architects, savings and loan associations, property owners and others to:
 - A. Rehabilitate existing dwellings where necessary and advisable.
 - B. Encourage the utilization of available and desirable land within the urban communities for the construction of new dwellings.



- C. Encourage the improvement of congested areas by increasing "living space" by the removal of undesirable structures, and by the repair and modernization of desirable structures.
- D. Awaken and foster community pride in well kept homes and tidy and orderly surroundings.

Organization

The Organizing Committee will assume responsibility of enlisting a representative of each of the following:

1. Building and Loan Associations
2. Builders
3. Builders' Supply Houses
4. Real Estate Brokers
5. Architects
6. Banks
7. Insurance Companies
8. Industry
9. Retailers
10. Labor
11. City and County Governments
12. Utilities

Where an existing organization represents all or most of the firms and persons within a group, and this is the case in most instances, the organization will be requested to nominate a person to represent it. In those instances where the group is not adequately represented by a single organization, the person to be selected to represent the group will be an individual possessing the support and confidence of the group.

The function of the Organizing Committee will cease when a representative is named from each of the twelve groups, and the Organizing Committee will dissolve when this is accomplished. Such subsequent vacancies as may occur will be filled by the Executive Board.

A Group Committee will be formed by each person enlisted by the Organizing Committee and he will act as chairman. The membership of the Group Committee will be composed of individuals drawn from the group which the chairman repre-

sents. The size and personnel will be determined largely by the chairman in general. The objective of each group Committee is to formulate its own plans for advancing the program and to put the plans into effect. For example:

- (a) The Real Estate Brokers Committee would adopt and authorize an appropriate insignia which would be displayed by each broker evidencing his participation in the program.
- (b) Each broker in his sales efforts would emphasize the advantages of urban living and would orient his activities, in so far as possible, so that they conform with the objectives of this program.
- (c) Contests and campaigns would be planned with recognition in one form or another for outstanding accomplishment.
- (d) The Committee would prepare and disseminate property listings and other pertinent information to the real estate profession.
- (e) All activities would be planned to tie in with those of other group committees.

The Executive Board is to be established for the purpose of developing and supervising the program and is to be composed of the chairman of each of the Group Committees and, ex officio, the President and Executive Director of the Milwaukee Association of Commerce.

The Chairman of the Board will be selected by the members of the board.

Four permanent operating committees of the Executive Board will be named by the chairman from among the members of the Board and will carry out such assignments, within the scope of their duties, as may be delegated to them by the Executive Board. Permanent committees are to be: (1) Legislative, (2) Taxation, (3) Financial, (4) Publicity.

The Legislative Committee shall be charged with the responsibility of keeping astride of legislative developments affect-

ing the program, shall represent the program, pursuant to instructions from the Executive Board, before all legislative bodies and shall originate such measures, except those relating to taxation, as will be helpful to the program.

The Taxation Committee shall devise and submit to the Executive Board real estate taxation proposals containing sound inducement features which will serve as incentives to urban development and improvement.

The Finance Committee will raise such funds as the Executive Board may direct.

The Publicity Committee will create and direct a community-wide campaign to awaken the public to the advantages of urban dwelling. The campaign will acquaint the public with what can be accomplished through modernization and improvement of sound, even though old structures; it will also stress the advantages of erecting new homes in areas where urban facilities and utilities are presently existent.

Milwaukee Rehabilitation Foundation

This Executive Board shall also be the Board of Directors of a nonstock, nonprofit corporation under a designation to be selected later. The name should signify the purposes of the corporation and "Milwaukee Rehabilitation Foundation" is proposed as possibly suitable.

The formation of the Foundation will be to prove practically, what can be accomplished under the program. The Foundation will acquire properties, rehabilitate them and sell them at a profit, if possible. It will erect new homes; it will endeavor on a modest scale to restore relatively small areas. In other words, it will endeavor to demonstrate visibly what can be accomplished.

The financial support for the Foundation will be from contributions by those who have an interest in urban development and improvement. A formula for determining the contributions can be devised later. Any

profit from operations will be reinvested in further ventures in keeping with the objectives of the program. Similarly, any funds remaining upon dissolution, after the original contributions have been returned, shall be expended in the same manner.

Active direction of the Foundation could possibly be in the hands of a General Manager who will be selected by the Executive Board. His compensation would be a relatively modest salary, say \$250 per month. However, his income would be enhanced by commissions on successfully completed projects, said rate of commission to be determined by the Executive Board.

Gas Refrigeration Promotion Campaign

TO tie in with their national advertising program, a local campaign on gas refrigeration has just been released to gas utility companies by Servel Inc.

This new planbook outlines two suggested campaigns. The first phase of the campaign is a series of newspaper ads that substantiate with local testimony the testimonials of famous people used in Servel's national ads.

The second suggested campaign is strictly testimonials from the gas company's local customers. The same preparation formula that was used in Servel's national advertising campaign, which is now appearing in many leading general publications, was used to spark this local plan book.

As an addition to this suggested gas refrigeration newspaper campaign, Servel is offering the utilities a new mailing piece

Appliance Dealers Told Gas Future



Partial view of dinner at which 103 gas range dealers and distributors in the Grand Rapids area were guests of the Michigan Consolidated Gas Company on June 30. Principal speakers were C. V. Sorenson, chairman, A. G. A. Residential Gas Section, and H. Vinton Potter, director, A. G. A. Coordinated Gas Kitchen Program, who spoke on the future of the gas appliance business. Wallace M. Chamberlain, sales manager, Grand Rapids district of Michigan Consolidated, acted as toastmaster.

entitled, "What Users Say About Servel." This piece is designed for architects, builders, and realtors, with the idea in mind that if you can keep this group sold on gas refrigeration you can be almost sure that the kitchens they design and build will be all-gas kitchens. It is also recommended for use as a bill stuffer for the utilities to send along with their monthly statements.

Emphasis, too, is laid on starting billboard advertising and floor displays now in the new campaign.

The full theme of this campaign is ex-

pressed in the title of the recently issued planbook, which is, "Getting Ready for the Postwar Market with Gas Refrigeration Now." This planbook is another step in Servel's series on postwar action, rather than postwar planning.

Postwar Gas Appliance Study Distributed

TWO parts of the national appliance survey conducted by the Subcommittee on New and Improved Postwar Gas Appliances of the Postwar Planning Committee of the American Gas Association have been completed and distributed to member gas and manufacturer companies. Report No. 1 covers Gas Ranges and Co-ordinated Gas Kitchens. Report No. 2 deals with Gas Refrigerators.

Each report is a tabulation of replies summarizing the opinions of gas companies on improvements most needed in postwar gas appliances. The report on gas ranges represents 81.3 per cent of the total gas meters in the United States while that on refrigerators, 79.9 per cent. Results of the survey have been tabulated on both a national and regional basis.

Results of the study indicate that on certain questions there is a wide unanimity of opinion and on others a wide divergence of views. No attempt has been made by the subcommittee to draw conclusions from the reports.

F. M. Rosenkrans, new business manager, The Gas Service Co., Kansas City, is chairman of the subcommittee in charge of the survey.



Center pages from the new gas refrigeration planbook issued by Servel Inc. to the gas industry. The main layouts for two suggested campaigns are shown



Industrial & Commercial Gas SECTION

CHARLES G. YOUNG, Chairman

HARRY K. WRENCH, Vice-Chairman

EUGENE D. MILENER, Secretary

Enlarged National Program of Industrial and Commercial Gas Advertising Starts



J. P. Leinroth

IN the last issue of the MONTHLY, appeared the announcement from H. Carl Wolf, chairman of the Committee on National Advertising and J. P. Leinroth, chairman of the National Advertising Committee of the Industrial and Commercial Gas Section that the American Gas Association national advertising in trade, technical and business magazines would be substantially increased beginning September 1, 1944. This enlarged campaign is now under way, and preprints of the new advertisements should be in the hands of all gas company members, industrial and commercial equipment manufacturers and individual members of the Industrial and Commercial Gas Section.

New publications where this advertising is appearing cover the food industries field, where gas is widely used in processing; the chemical and metallurgical fields where new development is constantly going on with many new opportunities for gas; the school field, which should see much new activity after the war in building and re-modeling, and where gas should be first choice for cafeterias and other uses. In the general industrial field, *Modern Industry* has been added while more space will be taken in *Business Week*, where the top executives and management men are being told of the great job gas can do for them.

All magazines heretofore on a six-time schedule annually, will be increased to twelve insertions and all new additions will likewise appear twelve times during the year. Advertisements will be full pages except *Modern Industry*, which will be half pages and *Business Week* two-third pages. The complete schedule and list of publications is as follows:

| Fields and Publications | Pages |
|--------------------------------------|-------|
| Metals | |
| Iron Age | 12 |
| Steel | 13 |
| Metals & Alloys | 12 |
| Metal Progress | 12 |
| Ceramics and Glass | |
| Ceramic Industry | 12 |
| Glass Industry | 12 |
| Food | |
| Food Industries | 12 |
| Chemical | |
| Chemical & Metallurgical Engineering | 12 |
| Baking | |
| Bakers Weekly | 13 |
| Bakers Helper | 13 |
| Commercial Cooking | |
| American Restaurant | 12 |
| Restaurant Management | 12 |
| Hotel Management | 12 |

Now - cooking is more of a science than ever!

What can it do for you?

Modern Gas Heat-Treating is "Tailor-made"

Recent advertisements in the national industrial and commercial campaign. This type of gas advertising will be greatly increased in the new program which begins in September

| | |
|---------------------------|------------|
| Modern Hospital | 12 |
| Institutions | 12 x 2/9 P |
| Nation's Schools | 12 |
| General Industrial | |
| Industrial Heating | 12 |
| Modern Industry | 12 x 1/2 P |
| Business Executive | |
| Business Week | 26% P |

This total of nineteen publications, reaching so many varied fields, was selected with great care and after considerable study by the committee and advertising counsel. Supporting data show that they reach the men who are important in the selection of industrial and commercial fuels in fields that have the richest promise for holding the great gains of gas in recent years and in expanding them.

The publications covering specific industrial and commercial gas fields are rounded out by the general coverage of *Business Week* which reaches top executives and managers—men who form company policy and frequently make final decisions regarding production problems and the choice of equipment—passing on the recommendation of their plant men and engineers.

This enlarged coverage of industrial and commercial markets for gas on a wide, national scale adds strength to the selling efforts of local gas company personnel. Many customers or potential customers may be seeing the A. G. A. Industrial and Commercial Gas advertising for the first time. Some will be seeing it more often than before. This broadening of our horizons offers greater new local opportunities.

As suggested each month in the advance broadside of coming advertising, local gas company officials are urged to merchandise the national advertising in their immediate territory, in any way that they see fit. Newspaper advertisements, envelope stuffers, reprints with sales letters—these are but a few suggestions to augment your local salesmanship with the help of your national advertisements. Many gas companies use these ads regularly as a basis for their local ads.

As outlined in the last issue by Mr. Leinroth, most of the first advertisements in the new campaign, while stressing the great role of Gas at War, highlight the part that gas will play in industrial reconversion and commercial modernizing. After the general introduction, geared however to each particular field, more specific examples of how gas can help the postwar industrialists and business men will follow. One specific example of how gas, the proved better fuel, is included in the September metal field publications.

Value of Sending in "Case Histories"

In the past several months the National Advertising Committee of the Industrial

* Liaison officer with Committee on National Advertising.

and Commercial Gas Section sent out two letters accompanied by guidance sheets asking for the compilation of data on local industrial and commercial installations suitable for building advertisements. It was also requested that photos and properly signed releases be secured.

These "case histories" are a most valuable form of advertising—they are excellent testimonials where all the pertinent information is secured and the advantages of gas underlined. And they have a collateral value in building local good will.

Recently an article by F. K. Whiteside of The Brooklyn Union Gas Company appeared in the MONTHLY on the installation of a gas-fired salt bath for heat-treating aluminum parts at the Pan American World Airways maintenance shop at LaGuardia Field, New York. It was selected as the basis for an advertisement now appearing in the metal fields. It was, submitted by the advertising agency for approval to Pan American whose advertising promotion manager replied as follows:

"This will acknowledge with thanks your letter of July 18 together with the final proofs of the ad for the American Gas Association, tying in the Pan American World Airways.

"In our opinion you have developed a

splendid ad and we hereby give our complete approval to the statements made regarding our company.

"We again wish to thank you for your fine cooperation and if at any time we can be of further service to you please do not hesitate to get in touch with us."

We feel certain that a similar kindred spirit of cooperation will be found among industrial and commercial gas customers all over the country.

Members of the National Advertising Committee of Industrial and Commercial Gas Section are J. P. Leinroth, *Chairman*, Public Service Electric & Gas Co., Newark, N. J.; F. B. Jones, *Vice-Chairman*, Equitable Gas Co., Pittsburgh, Pa.; Lawrence E. Biemiller, Consolidated Gas Electric Light & Power Company of Baltimore, Baltimore, Md.; F. T. Brooks, Philadelphia Electric Co., Philadelphia, Pa.; Ben H. Gardner, Columbia Engineering Corp., Columbus, Ohio; *D. P. Hartson, Equitable Gas Co., Pittsburgh, Pa.; Ronald A. Malony, The Bridgeport Gas Light Co., Bridgeport, Conn.; T. H. Spain, Public Service Electric & Gas Co., Newark, N. J.; H. Carl Wolf, Atlanta Gas Light Co., Atlanta, Ga.; Eugene D. Milener, *Secretary*, American Gas Association, New York, N. Y.

Manufacturers Expand Advertising in Commercial Trade Magazines

WITH the A. G. A. Industrial and Commercial Gas National Advertising really getting into high gear beginning with September, manufacturers of industrial and commercial gas equipment are stepping up their national advertising programs in a most encouraging manner.

Among the manufacturers of equipment in the commercial cooking and baking field who are speeding up their programs are The G. S. Blodgett Co., Inc. of Burlington, Vermont, the oldest manufacturer of gas baking and roasting deck ovens, and Standard Gas Equipment Corporation of Baltimore, Maryland, manufacturer of gas heavy duty cooking and baking equipment.

The Blodgett schedule makes an impressive showing and calls for advertisements to appear in the following eleven trade papers during the coming year: American School & University; Architectural Record; Hospitals; Hospital Yearbook; Hotel Buyers Directory; Hotel Management; Institutions; Journal of American Dietetic Association; Restaurant Buyers Directory; Restaurant Management; School Management.

Among the publications which will be used by Standard Gas Equipment Corporation in their commercial cooking and baking advertising are: American Restaurant; Restaurant Management; Hotel Management; Modern Hospital; Institutions; Nations Schools.

With the relaxing of WPB restrictions, particularly for replacement of commercial cooking and baking equipment and for the manufacture of such apparatus, manufacturers and industrial and commercial gas men look for considerable increased business in this field. Perhaps no class of gas equipment has been used so intensively during the war period as commercial cooking and baking apparatus and this situation has been recognized by WPB in providing more liberal regulations for replacements in order that mass feeding of war workers and other civilians will not be impaired.

Commenting on the expansion of appliance manufacturer advertising in this field, J. P. Leinroth, Chairman of the National Advertising Committee of the Industrial and Commercial Gas Section said: "The A. G. A. Industrial and Commercial Gas Advertising by and with the large programs of equipment manufacturers are creating a force which will be a tower of strength to us not only through the balance of the war period, but through the highly competitive period that will follow the war. Improved industrial and commercial gas equipment will have to be brought forcibly to the attention of prospective purchasers and national advertising in leading trade, business and technical magazines reaches the business people to whom we

must sell our gas. I am very much pleased with the reports I am receiving from industrial and commercial gas equipment manufacturers of sustained national advertising on their part."

Gas at the National Restaurant Exhibit

AMONG the exhibitors of gas equipment at the 1944 National Restaurant Convention and Exposition will be the following:

American Stove Company, Anetsberger Bros., G. S. Blodgett Co. Cleveland Range Co., Detroit-Michigan Stove Co., Hobart Manufacturing Co., Jackson Dishwasher Co., Majestic Company, J. C. Pitman & Sons, Inc., Robertshaw Thermostat Co., Savory Equipment, Inc., and Standard Gas Equipment Corporation.

This interesting and important exhibit will follow the A. G. A. Annual Meeting in the Stevens Hotel, Chicago, and will extend through October 10-11-12.

Waste Chasers Quiz

WASTE Chasers Quiz No. 12 has to do with Oil and Gas Power Boiler Units and is edited for direct use of firemen and engineers in boiler rooms. It consists of 15 plain-spoken questions and answers that not only inspire operations to save fuel, but give pointed helps on how to do it.

Copies of Waste Chasers Quiz No. 12 can be secured at no cost from National Fuel Efficiency Program c/o U. S. Department of the Interior, Bureau of Mines, Washington, D. C.

Will Use Gas To Save Fuel Oil

EXPECTING to save 216,000 barrels of scarce fuel oil by maximum use of gas in its steam power houses during the last quarter of 1944, the Pacific Gas & Electric Co. recently announced construction of additional natural gas transmission facilities was underway.

Additional pipe lines being laid at a cost of \$2,000,000 will help relieve the fuel oil situation throughout California, company officials said, by making gas available for use in electric generating plants.

"Cooking for Profit" Enlarged

BEGINNING with the September issue, *Cooking for Profit* is doubling its size; going from eight to sixteen pages. Fenton Kelsey, Sr., publisher, explaining the expansion, said: "We are doing this to include two new sections that are fast coming

to the fore in restaurant thinking: (1) sanitation and water heating; (2) bake ovens—using gas cabinet and revolving tray ovens for roasting and meat baking, as well as regular bread and pastry baking.

"This size doubling is available at no additional cost to gas companies because a limited amount of advertising from established manufacturers of gas commercial equipment is now being accepted.

"The entire editorial policy of *Cooking*

for Profit is swinging into the coming period in volume cooking. "Kitchen designing to save steps and increase efficiency, functional cooking, and gas equipment I'm-going-to-buy, will be new angles. Slow roasting, use of the gas deep fat fryer, gas heavy duty equipment, recipes, food hints, installation stories, will be in as always. These, plus sanitation and baking, and the real reader value of gas equipment ads, all add up to a better than ever service to the gas industry."

American Gas Association Industrial and Commercial Gas Advertising for September

The National Advertising Committee of the Industrial and Commercial Gas Section, J. P. Leinroth, chairman, and F. B. Jones, vice-chairman, announces that full page advertisements will appear in the trade and business magazines listed below during the month of September. These advertisements are prepared in cooperation with the Committee on National Advertising as a part of the industry's national advertising campaign.

| MAGAZINE | THEME |
|---|---|
| MODERN INDUSTRY (1½ page) | General Manufacturing |
| BUSINESS WEEK (Sept. 9— ¾ page) | Keen postwar competition demands GAS for industrial heating. |
| INDUSTRIAL HEATING | What do you require in a fuel for Industrial Heat Treating? |
| METAL PROGRESS | Metals Industry |
| STEEL (Sept. 18) | What do you require in a fuel for Industrial Heat Treating? |
| IRON AGE (Sept. 7) | GAS-FIRED furnace helps clippers keep busy schedules. |
| METALS AND ALLOYS | Ceramic Industry |
| CERAMIC INDUSTRY | Call in your Local GAS Company Engineer on your Ceramic Firing problems. |
| GLASS INDUSTRY | Glass Industry |
| CHEMICAL AND METALLURGICAL ENGINEERING | A partnership proved in war for greater peacetime progress—Glass and GAS. |
| AMERICAN RESTAURANT RESTAURANT MANAGEMENT | Chemical Field |
| HOTEL MANAGEMENT | Back of the Nation's Production miracle . . . GAS RESEARCH. |
| INSTITUTIONS MAGAZINE | Hotel and Restaurant Field |
| NATION'S SCHOOLS | For a head start on the field . . . Plan on GAS when Modernizing. |
| MODERN HOSPITAL | GAS cooks for Hundreds of Student Soldiers at University of Pittsburgh. |
| BAKERS HELPER (Sept. 9) | For postwar building or remodeling—GAS for all cooking and baking. |
| BAKERS WEEKLY (Sept. 18) | School Field |
| FOOD INDUSTRIES | For postwar building or remodeling—GAS for all cooking and baking. |
| | Hospital Field |
| | For postwar building or remodeling—GAS for all cooking and baking. |
| | Baking Field |
| | For a head start on the field . . . Plan on GAS when Modernizing. |
| | Food Processing |
| | Back of the Nation's production miracle . . . GAS RESEARCH. |



Technical SECTION

CHARLES F. TURNER, *Chairman*

L. E. KNOWLTON, *Vice-Chairman*

A. GORDON KING, *Secretary*

Report of Subcommittee on Use of Oxygen in the Manufacture of Gas*

THIS report is offered as a progress report for the purpose of reviewing the work to date of this subcommittee; to give an outline of the general problem, and to delineate the scope of the investigation that the committee hopes to undertake. It was not possible to hold a meeting of the subcommittee until March 31, consequently our activities have been confined to what could be accomplished during the two months of April and May.

Work of Previous Committees

The subject of the use of oxygen in place of air for the manufacture of gas has been brought to the attention of the American Gas Association many times in the past. Without attempting a history, it is still of some value to review the conclusions of the more recent reports. In 1925 it was reported to the Association that the uses of oxygen might be imminent. The semi-commercial plant of Jefferies and Norton had been examined, and in addition, the results of tests on the Thwing Oil-Gas Process made the subcommittee of that year quite enthusiastic. They reported in fact, that anticipated costs of oxygen including all fixed charges would be as low as 10 cents per M cu.ft. for a plant producing 2,000 cu.ft. per minute.

The following year the situation seemed much less promising, and in 1926 the Chemical Committee reported that "careful engineering comparison indicates that at 20 cents per M cu.ft. of oxygen, its use would probably be an attractive proposition; and that at 50 cents it might under certain circumstances be commercially used . . . in gas making." In reaching this conclusion the Chemical Committee was undoubtedly seeking to include savings which would result from advantages in addition to the fuel saving by the use of oxygen in place of air. At the same time it was stated that there was no probability of obtaining oxygen at these prices in the foreseeable future.

Three years later another subcommittee (1929) on the use of oxygen was more pessimistic and reported that with the use of coke at \$8.00 a ton, one could hope for a break-even cost with current practice, if oxygen could be obtained for 8 cents or

DR. S. P. BURKE

*Chairman, Columbia University,
New York, N. Y.*

less per M cu.ft. Admittedly, in reaching this conclusion, the committee took into consideration only the actual saving in coke by the use of oxygen.

Apparently the Association temporarily lost interest in the subject, for no subsequent committee on the use of oxygen was formed until the present. However, in 1939 in an article "The Possibilities of Future Gas Production Costs," published in the A. G. A. Proceedings, L. J. Willien briefly considered the opportunities for the use of oxygen and concluded that under present practice if oxygen were employed in a gas producer in place of air, a blue gas of approximately 300 B.t.u. could be produced with a saving of 8.4 pounds of fuel. This would require that oxygen must be supplied at approximately 3 cents per M cu.ft., if its use yielded no other economy.

In recent years, however, a number of articles have appeared, notably in the foreign press reporting fairly large-scale experimental tests on the use of oxygen for gas manufacture, and in addition, fairly large capacity oxygen plants have been constructed, particularly in Germany, and further information is now available, both on the actual operation of gas machines using oxygen and some indications are available on the cost of oxygen when produced in quantities of interest to gas industry. Unfortunately, even yet, the available data are conflicting, and are based on observations of short duration. The precision of any estimates that your subcommittee can make is further reduced by the necessity of translating from foreign to American practice. For the interim use of the industry, pending our final report, a preliminary but carefully selected bibliography is appended.

The Problem

The use of oxygen for the manufacture of gas presents an extremely complex problem. Current developments and changing technologies in the synthetic chemical industry introduces additional complications. From the viewpoint of the gas engineer a consideration of the diverse cycles of op-

eration which are possible, of the problems of low and high B.t.u. gas, of the possibilities of complete gasification, of the nature of and the credits for by-products, of whether nitrogen or hydrogen to be produced simultaneously with oxygen are to find markets—make any complete analysis a ramified problem.

Accordingly, therefore, the subcommittee decided to limit its first analysis to that of the continuous production of blue gas of about 300 B.t.u. using coke as fuel. This may be regarded as a producer operation using oxygen and producing a 300 B.t.u. gas or as a water gas operation in which the same raw materials are employed, and the reactions in the fuel bed are maintained exothermic, so that a continuous make-run can be realized. Obviously, both viewpoints amount practically to the same thing. By thus limiting the problem, the committee believes the results of any findings can be readily comprehended and can be more easily applied to the complicated questions involving carburetion to produce high B.t.u. gas, the use of fuels other than coke, and the several questions concerning the application of gas in the synthetic chemical industry, as well as to the many other ramifications indicated above.

Scope

Having defined the initial field of its investigation, the committee next tentatively determined the scope of its investigation. It plans if possible to present:

a. A review of the literature and of what is known to have been accomplished in the production of oxygen, and the costs thereof. The attempt will be made to include estimates of probable capital investment as well as costs of operation of oxygen plants and their variation with the size of the plant.

b. A corresponding review of what is known to have been actually accomplished in the experimental or large-scale application of oxygen for the continuous production of 300 B.t.u. gas.

c. An examination of any new developments that may be imminent in the technology of oxygen production or gas manufacture, or in the synthetic chemical industry, which may markedly alter the economic feasibility of the use of oxygen in the near future.

* Gas Production Subcommittee report presented at Joint Production and Chemical Conference, New York, N. Y., June 6-7, 1944.

d. A definition of any serious technical problems that remain to be solved before oxygen can be satisfactorily employed in continuous gas producing equipment.

e. The committee does not plan to include within the scope of its investigation beyond a statement thereof, any of the problems involved in the utilization of the transmission of gas produced by means of oxygen, or in the economics of the application of oxygen to gas manufacture in the public utility field. Your committee recognizes the importance of such problems, but believes that they do not fall within the scope of its present activities.

Preliminary Indications

a. GASIFICATION. Subject to modification in our final report some preliminary indications which may be of interest can be outlined. It appears—based upon reports of several different experimental investigations on a reasonable scale—that if 98% oxygen is substituted for air in the producer, (1) a gas of approximately 300 B.t.u. can be continuously manufactured from coke without increasing the clinkering difficulties above those experienced with the same fuel, using present methods of operation; (2) that approximately 220 cu.ft. of oxygen are necessary for the production of 1,000 cu.ft. of blue gas. While no adequate data are available, covering a sufficient length of time of operation, (3) there is no indication that any serious refractory problem will be encountered nor (4) will the deterioration of the grates or other parts of the producer be seriously increased.

There is good reason to believe that subject to the limitations of clinkering difficulties the capacity of the gas machine can be increased to the extent that would be anticipated from the substitution of 300 B.t.u. gas for nitrogen existing in producer gas or correspondingly—as compared with a water gas set,—by the substitution of a make-run for the duration of the blow-run. In the former case, this would imply about 150% increase in effective gas-making capacity. As the additional advantages that the use of oxygen entails is the attainment of 90 per cent or better cold gas efficient as compared with current practice of approximately 60 per cent for blue gas operation and 75 per cent for producer operation. Finally, very tangible savings appear possible because of simplification of gas production equipment and continuous operation.

A further significant development in the use of oxygen which is apparently being experimentally realized in Germany, but which has not been stressed in this country, is the automatic enrichment of the gas through continuous operation under pressures up to 20-25 atmos.

Under these conditions the reactions between carbon monoxide and hydrogen to synthesize methane are relatively enhanced. Reports of operations in Germany indicate that the continuous gasification of carbon under these conditions results in a blue gas

"COST OF PRODUCTION" OF 98% OXYGEN See M. Ruhmann, "The Separation of Gases" (Oxford Press, 1940, p. 176)

| Materials | Plant I | | Plant II | |
|-----------------|--------------------------|---------|--------------------------|---------|
| | Amount required per hour | Cost \$ | Amount required per hour | Cost \$ |
| Air | 1,590 M cu. ft. | | 60.1 M cu. ft. | |
| Chemicals | 33 lbs. | 0.100 | 1.1 lbs. | 0.033 |
| Lubricating oil | 0.8 gal. | 0.120 | 0.1 gal. | 0.015 |
| Water | 42,300 gal. | 0.640 | 2,910 gal. | 0.435 |
| Power | 3,600 KWH | 18.000 | 160 KWH | 0.800 |
| Wages | 5 men | 5.000 | 2 men | 2.000 |
| Investment | \$800,000 | 15.450 | \$108,000 | 2.085 |
| Totals | | 39.310 | | 5.368 |

| | |
|-----------------------------------|---------------------|
| Plant (I) Production | = 283 M cu. ft./hr. |
| Chemicals (NaOH) @ 3c/lb. | |
| Oil @ 15c/gal. | |
| Water @ 1.5c/M gal. | |
| Power @ 5 mills/KWH | |
| Wages @ \$1 per man-hr. | |
| Depreciation @ 15% | |
| Plant operating | = 326 days per year |

| | |
|---|----------------------|
| Plant (II) Production | = 10.6 M cu. ft./hr. |
| Operating cost Plant (I) = \$0.139/M cu. ft. O ₂ | |
| Plant (II) = \$0.506/M cu. ft. O ₂ | |

carrying 20 per cent methane and higher hydrocarbons.

b. OXYGEN PRODUCTION. A few interesting estimates have been published on the cost of 98% oxygen. The data that are now available indicate clearly that the proportionate plant investment decreases considerably as the size of the plant increases. In addition, striking reductions in power requirements per unit of oxygen produced, which is the major cost, are realized as the plant capacity increases. Unfortunately, as yet, no factual data are available, which are based upon actual large-scale operations.

Of the projected estimates, probably the most reliable are those recently reported which in reality are pre-construction estimates made in 1939 for proposed German plants which are presumably now in operation. The accompanying table shows the materials, power, labor and depreciation costs. Case I is for a projected plant of 283,000 cu.ft. of oxygen per hour. Case II which presumably represents data from plants actually in operation covers a 10,600 cu.ft. of oxygen per hour plant, using the same process. The writer has converted the requirements into costs based upon possible American practice as shown in the table.

The projected cost for the larger plant would indicate a cost of production of about 14 cents per M cu.ft. of 98% oxygen. In view of other estimates which have been published, these figures seem conservative. Obviously, costs which can be attained are based upon the raw materials, power and labor costs, available in a given location. If these could be obtained at prices lower than those assumed, the resulting oxygen costs would be correspondingly lowered. It is interesting to observe that on the basis of the data shown, the costs of oxygen appear to have approached the realm of its

possible utilization by the manufactured gas industry.

One other recent indication is worthy of note. It has usually been assumed that, except under extremely unique conditions, the production of oxygen by the electrolysis of water was not an economically feasible method of production for the gas industry. Reports from Sweden and Germany indicate that special electrolysis cells have been successfully employed to produce oxygen and hydrogen from water at pressures up to approximately 200 atmos.

It is claimed that this does not by any means constitute the upper limit of pressure. What is significant is the fact that at these pressures, a depolarization effect and a reduction of solution resistance occurs, which improves the electrical efficiency of the cell to a degree sufficient to offset the energy of compression. In other words, the compression of the gases is obtained "free," the electrical requirement being no greater than that necessary at atmospheric pressures. It is further claimed that no significant constructional difficulties have been encountered. The size and cost of these electrolytic plants are reported to be far less than those required for the production of oxygen from air. In addition, compressed hydrogen and compressed oxygen are obtained without the need of a compressor-plant.

If these reports are correct, a re-examination by the gas industry of the electrolytic process for the production of hydrogen and oxygen under pressure is indicated. The process might have merit for gasification under pressure using oxygen with its attendant advantages, where, at the same time, the compressed hydrogen might be economically employed for chemical synthesis.

These and related questions will be dis-

cussed more fully in the final report of your committee. In conclusion, your chairman wishes to express to the able members constituting the personnel of his committee, his appreciation for their cooperation and assistance, and also to the staff at American Gas Association Headquarters. This tribute is given in the anticipation that this cooperation and assistance will continue to be actively extended during the life of this subcommittee.

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Gas Turbine

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Work of the Gas Research Board: Removal of Organic Sulphur Compounds from Coal Gas and Other Gases—Dr. J. G. King—Gas Journal, May 24, 1944: 660-1.

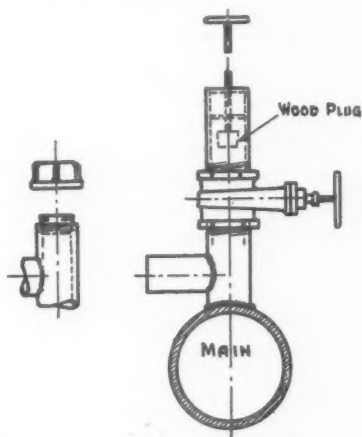
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Sulphur Removal and Recovery from Coke Oven Gas—N. G. Farquhar—Chem. & Met. Eng., July 1944: 94-6 (Ill. Flow-sheet pp. 130-3).

socket is slipped over the lubricating cap screw on the valve, the spring clip forces the pin through the hole in the cap screw. In this way the screw is lifted out of the valve and the roadway box after it is unscrewed. The alemite fitting is then placed on the gun with the extension handle on the other end, lowered into the box, fittings screwed into the valve and grease forced in. The socket wrench used to remove the cap screws must be strong.

Steel Tees With Wood Plugs Used to Control Pressure When Making Hot Taps

The tee is connected to the main either by welding or with a service saddle. The new connection is tied into the branch of the tee before the hole is drilled in the main. The drilling is done with a machine, and through a gate valve.



The wooden plug is inserted in the top of the tee with a plugging device working through the gate valve. The plug is made tight by striking the handle of the plugging device a blow with a hammer. The plugging device and gate are removed and a screw cap installed to complete the operation.

Pipe Descaling Burner Used to Loosen Dirt and Scale on Steel Mains

A pipe descaling burner consisting of Selas No. 3 superheat burners, built into a manifold completely encircling the pipe, is used to recondition pipe in the trench. Sufficient heat is applied to the pipe to thoroughly dry and loosen all the dirt and scale. A satisfactory job of cleaning is obtained by following the descaling burner with the Jinnett pipe scraper.

Reconditioning of Steel Pipe

The reconditioning of unprotected steel pipe which has been removed from the ground can be made easier by the application of mechanical cleaning devices. One of these, called a chain cleaner is made by fastening one end of a number of short hardened steel chains to the periphery of

WRINKLES

This is the second in a series of "wrinkles" compiled by the Chemical Wrinkles Subcommittee of the Technical Section consisting of W. R. Fraser, Michigan Consolidated Gas Co., Detroit, chairman; R. M. Buck, Bryant Heater Company, Cleveland; F. H. Bunnell, Consumers Power Co., Jackson, Mich.; and Marshall Hyde, Detroit Edison Co., Port Huron, Mich.

More than 100 wrinkles are contained in the complete report of the Wrinkles Subcommittee which is available at Association headquarters.

DISTRIBUTION—Continued

Mains and Valves

Pipe Pinching Machine

The purpose of this machine is to shut off high pressure gas mains when valves are not available. It consists of a hydraulic ram (Black Hawk Manufacturing Company, Milwaukee, Wisconsin, Model R-210, approximate weight 60 lbs., capacity 50 tons), a hydraulic pump (Black Hawk Model P-85) and a frame made of 5" channel iron. The machine is placed on the pipe with the pipe between the shear plates. The hydraulic ram then pinches the pipe together, thus stopping the flow of gas.

Pipe Crushing Device for Service Tie-Over

During the course of main replacement jobs, it is often desirable to keep gas in both the old main and the new main in order that customers will not be out of gas for any considerable period of time. In order that services can be tied over from the old main to the new main more readily, a pipe crushing device has been developed which collapses the walls of the service pipe, effecting a quick shutoff before the tie-over is made. The pipe crusher consists of a pair of steel jaws operated by a screw. The bottom jaw is removable to allow

the device to be installed on top of the service. The upper jaw is raised or lowered by means of the screw. A heavy duty valve-operating wrench has been developed to fit over the head of the screw so that the device can be operated from the top of the trench or bell hole.

Lubrication of Cocks and Valves

Alemite fittings with extensions above ground have proven satisfactory. A lever-type lubricating gun is used. The problem has been to provide a quick and ready means for providing lubrication for the plug valves, particularly where valve boxes are used and the valve is some distance below the top of the ground.

The handle of the alemite gun is changed by cutting off the tee bar and welding on a hex nut taken from a Merco lubricating cap screw. This cap screw has a hole drilled through the head for inserting a pin. The lubricating cap screws in the Merco valves were removed by welding a heavy socket wrench to the end of an inch and a quarter pipe five or six feet long. The socket was drilled and a spring clip was fastened to the socket with a pin on one end of the clip so that the pin would slip into the hole drilled into the side of the socket. When the

a cylindrical drum. The drum is motor driven and is rotated laterally to the pipe in a position where the free ends of the chains strike the pipe. This action removes dirt, rust and scale by impact.

Where tightly adherent scale is encountered it may be necessary to supplement the chain cleaner with a special descaling burner. This burner can be made of a number of Sels high temperature superheat burners manifolded together and supplied with an air-gas mixture under pressure. Flame action loosens the scale which can then be removed with the chain cleaner. Manual or mechanical wire brushing will remove the final dust. All of these devices can be mounted in fixtures which facilitate their application.

The above requires the use of equipment for moving the pipe laterally over the cleaner. It is also preferable to rotate the pipe as well as move it laterally.

Power Driven Cleaner Used To Clean Pipe in Trench

The Jinnett pipe scraper designed to be operated by hand is driven by a gasoline engine. The speed of the engine is reduced through a belt drive and gear reduction, to a speed of 80 R.P.M. The handle of the scraper is connected to the drive shaft through an eccentric which gives the same rocker motion to the scraper as when it is manually operated.

Speedy Tapping Device for Temporary Pressure Determinations

This apparatus enables field men to obtain pressure readings at any point on an exposed main, without the aid of special fittings. A thin steel yoke fitted with an automobile tire valve stem is fastened around the pipe with a leather strap, using a $\frac{1}{2}$ " x 2" x 2" rubber saddle gasket. A No. 55 M.T.D. hole is drilled in the pipe through the valve stem (properly bushed for drill guidance). A pressure gauge or manometer can then be connected to the valve stem. The tapping and pressure reading operations can be accomplished in less than three minutes. The tap hole can be plugged by using a No. 00 x $\frac{3}{16}$ " U-drive hardened screw, hammered into the hole, making it leak proof to pressures above 150 lbs. For occasions where continuous or periodic pressure readings are necessary a temporary service saddle should be used.

View Plug for Observation of Interior Condition of Pipe

It is sometimes desirable to observe the condition of the interior of a main or service while the pipe is under pressure. To do this a transparent lucite view plug has been developed. By screwing the plug into a $\frac{1}{2}$ " gate valve installed on a service tee or on a main tap and with the aid of a light directed through the plug, the interior condition of the main or service at that point may be observed. The device is particularly useful in obtaining

information as to size or type of service tap which has been made in a main, and in locating obstructions.

Chemical Conference

CONTRIBUTIONS of industrial chemical engineering to the petroleum, synthetic rubber and other industries will be revealed by noted authorities at the National Industrial Chemical Conference to be held in conjunction with the third biennial National Chemical Exposition at the Coliseum in Chicago, Nov. 15 to 19.

In a symposium on "The Future of Metals in Postwar", Dr. L. B. Grant of the Dow Chemical Company, Midland, Michigan, will talk on magnesium; Dr. J. V. Faragher of the Aluminum Company of America, Pittsburg, Pa., will discuss aluminum, and John Mitchell, metallurgical engineer of the Carnegie-Illinois Steel Company, Pittsburgh, Pa., will speak on new steel alloys.

Carbonizing Properties of Coal Studied

ADDING to industry's knowledge of the adaptability of American coals to wartime uses, the Bureau of Mines has published a report on the carbonizing properties of 20 coals from eight States, bringing to 86 the number tested by a method developed by the Bureau in co-operation with the American Gas Association, Dr. R. R. Sayers, Bureau Director, has announced.

The 20 coals discussed in the latest report are from Kentucky, Oklahoma, Arkansas, Kansas, Pennsylvania, West Virginia, North Dakota, and Wyoming. Dr. Sayers informed Secretary of the Interior Harold L. Ickes. Both the proximate analysis (determination of moisture, volatile matter, and ash) and the ultimate analysis (determination of the ash and chemical elements present in the combustible portion) of the various coals are given.

A copy of Report of Investigations 3760, "Work of the Survey of Carbonizing Properties of American Coals," may be obtained from the Bureau of Mines, Department of the Interior, Washington 25, D. C.

Report on Fischer-Tropsch Catalysts

TO assist in guiding research and experimental work in the production of synthetic liquid fuels, the Bureau of Mines has published a survey of scientific material on the preparation and properties of metal carbides and their importance as catalysts in the Fischer-Tropsch process—one of the methods of making gasoline and oil from coal—Dr. R. R. Sayers, director of the bureau, has announced.

The report brings together the more re-

liable facts on the carbides of iron, cobalt, and nickel in their connection with liquid fuel production by the synthesis of gases from coal or coke. Its compilation is only one phase in a long series of synthetic liquid fuel experiments and investigations conducted by the Bureau of Mines in recent years.

A copy of the report may be obtained by writing to the Bureau of Mines, Department of the Interior, Washington 25, D. C., for Report of Investigation 3770, "The Preparation and Properties of Metal Carbides with Critical Comment as to Their Significance in the Fischer-Tropsch Synthesis," by L. J. E. Hofer.

Failure of Spherical Gas Holder

A VALUABLE illustrated technical paper, "Large Spherical Compressed Gas Containers," presented at the 1944 annual meeting of the National Fire Protection Association by J. B. Smith of the Associated Factory Mutual Fire Insurance Companies, is contained in the July Quarterly of the NFPA. The article contains considerable technical data concerning the structural failure of a holder in Schenectady, N. Y. Copies are obtainable from the National Fire Protection Association at 60 Batterymarch St., Boston 10, Mass., at a cost of 25¢ each.

Mr. Smith also collaborated with A. L. Brown in the preparation of an article on the same subject, entitled "Failure of Spherical Hydrogen Storage Tank," which appeared in the June 1944 issue of *Mechanical Engineering*, starting on page 392.

Ontario Gas Fields Described by Evans

A LIMITED number of copies of a paper on "Natural Gas Fields in Southwestern Ontario" by Dr. Charles S. Evans, geologist for Union Gas Co. of Canada Ltd., is available upon request to the American Gas Association, 420 Lexington Ave., New York 17, N. Y. It was presented before The Natural Gas and Petroleum Association of Canada on June 9 at Niagara Falls, Ontario.

Schoenberger Co. Wins Production Honor

THE W. J. Schoenberger Company announces that, for each subsequent six months since receiving the original Army-Navy "E" award, they have received a star for continued outstanding production.

The present award of the fourth star marks the completion of two years of continuous excellent production, since the original pennant was presented, and entitles the Schoenberger Company to permanent possession of this coveted pennant.



Laboratories

GEORGE E. WHITWELL, *Chairman*

R. M. CONNER, *Director*

W. H. VOGAN, *Supervisor, Pacific Coast Branch*

Laboratories Annual Inspections

PREPARATIONS are being made by the American Gas Association Testing Laboratories for annual inspections of approved gas appliances at the premises of manufacturers.

An announcement by R. M. Conner, director, states that inspection trips will start on or about October 1. Approval of equipment found on examination in the field to comply fully with Laboratories' records of approved models will be renewed for the year 1945.

While inspection activities have been curtailed due to wartime conditions, they are expected to increase rapidly as the war in Europe comes to a close. Every effort will be made to render the speediest possible service to all manufacturers.

This year the factories of approximately 170 manufacturers will be visited to inspect production models to insure that their construction is identical to that of the samples originally tested and approved. The majority of the trips will be made from the Cleveland Laboratories and the remainder from the Pacific Coast Branch. Ample advance notice of visits will be given manufacturers so that mutually satisfactory arrangements can be made.

In addition to factory visits, inspections will be made in warehouses where gas appliances are stored, in department stores and on dealers' sales floors. Visits are also occasionally paid to consumers' homes for the purpose of checking not only individual appliances but their installation as well.

Chinese Interest in Gas Appliances

EVEN in China it is possible to check American gas appliances should one have occasion to do so. A letter from Liming Tseng, director of the Chinese National Bureau of Standards, Ministry of Economic Affairs, Chungking, has been received by the American Gas Association Testing Laboratories thanking them for the Directories of Approved Gas Appliances and Listed Accessories which have arrived from time to time.

The letter, which was three months in transit, reopens correspondence with the Chinese government from which the Laboratories had not heard since the United States entered the war. In former years the Chinese had displayed much interest in gas equipment requirements and testing procedures and made a number of requests

for publications covering them. On several occasions representatives visited the Laboratories.

Association Headquarters has, from time to time during the war, sent gas industry publications to the Chinese National Library at Chungking to aid in rebuilding that institution which was destroyed by the Japanese in their conquest of Nanking.

Laboratories Worker Awarded Degree



Elizabeth McNutt

THE first feminine scientist of the American Gas Association Testing Laboratories staff to receive a degree of Master of Arts is Miss Elizabeth McNutt. She completed required studies during a six weeks' term at George Peabody College at Nashville, Tennessee, and was awarded the degree of Master of Arts in Home Economics on August 25.

Miss McNutt has been employed by the Laboratories since September 15, 1943. Prior to that time she had secured credit for all but six weeks' work toward her advanced degree and consequently was granted a leave of absence this summer to complete her studies. During the past year she participated in domestic gas research studies and helped with the war program. She is now assisting in publication work.

Following graduation from East Texas State College in 1941, Miss McNutt taught vocational home economics at Overton High School, Overton, Texas. Her home is in Tyler, Texas.

APPLIANCE TESTING FOR ALTITUDE PERFORMANCE

(Continued from page 348)

tests at the various altitudes, however careful observations of glowing of radiants were noted. As the four radiant heaters employed had previously complied with American Standard approval requirements for radiant efficiency, comparison of their glowing seemed to be a satisfactory procedure. This was especially true of the Washington tests as changes in altitude could be accomplished in a short period of time. It is important to bear in mind that users of radiant heaters evaluate their usefulness by the glowing effect as well as the amount of heat emitted.

It was quite obvious during all of these tests that better glowing effect prevailed at higher altitudes than at sea level with the same gas input rating. In other words, if the manufacturer's normal input rating can be attained at high altitude more heat would be emitted than at sea level. This is to be expected as a greater volume of flue gases result from combustion of a given B.t.u. input at high elevation than at sea level.

Draft Diverter Performance

Tests were made on three vented appliances at Los Angeles and Lake Arrowhead to determine the effect of altitude on draft diverter performance. These studies consisted of analysis for carbon monoxide in the flue gases with the outlet of the draft diverter closed and for spillage of flue gases from its relief openings. Tests on effect of updraft and downdraft outlined in A. G. A. approval requirements were not made as it seemed probable that such considerations would not be affected by changes in altitude.

Satisfactory combustion was obtained with the outlet of the diverter blocked on all three appliances at full input rates at 5,130 ft. elevation and at considerably more than normal rating at

sea level. Spillage of flue gases from the relief opening of the diverter did not occur on two appliances at either altitude whereas on the floor furnace some spillage occurred at normal rate at 5,130 ft. and at 18% overrating at sea level. Spillage from the diverter may have been caused by the skirt of the diverter being too short or its location being too near the burners. Apparently the characteristics indicated resulted from the increase in volume of flue products.

Based on results of this investigation American Gas Association approval requirements subcommittees for domestic gas ranges, space heaters, water heaters and central heating gas appliances prepared tentative requirements which have been submitted to the industry for criticism. These new requirements provide for testing the gas appliances for approval for use at high altitudes. They include appropriate test methods, name plate marking and a suggested procedure for listing in the American Gas Association Directory for Approved Appliances and Listed Accessories.

Appliances Overrated for Testing

Testing will be done at Cleveland and Los Angeles by overrating the appliance 26% at the prevailing altitude. Present A. G. A. approval tests at low altitude will insure safety on all approved appliances properly installed and adjusted up to 2,000 ft. elevation. A large majority of them will be satisfactory up to 3,000 ft. elevation and many will operate satisfactorily up to 5,000 ft. elevation without changes in construction. All will operate safely at high altitudes although they may not satisfy the user when a reduction in rating of 5% per thousand feet is employed.

Under the procedure proposed, an appliance manufacturer will be given the choice of indicating whether conduct of high altitude tests is desired. Such tests will be made for approval for the equivalent of 5,200 ft. elevation. The majority of cities in the Rocky Mountain area are located at elevations of 5,200 ft. or less. Very few are situated at higher elevations and most of them are below 7,000 ft. The weighted average altitude for the principal cities in the Rocky Mountain

area in which natural gas is served is 5,099.9 ft. The four largest cities, Denver, Salt Lake City, Pueblo and Ogden representing 81% of the total population would come within the recommended 5,200 ft. test elevation. Approval for high altitude will be limited by definition to elevations between 2,000 and 5,200 ft. Above 5,200 ft. the input rating should be reduced 5% per 1,000 ft. increase in elevation from the approved high altitude rating.

Conclusions

1. The primary effects of altitude on gas appliance operation are lengthening and softening of flames, increased volume of gas for a given B.t.u. input resulting in greater pressure drop through controls and larger volume of flue gases to be handled through flueways and draft diverters.

2. Present recommended procedure to reduce the input rating 5% per thousand feet elevation is adequate to insure safety, but in some instances does not provide the user satisfactory heating service. A closer exact average reduction would be 3-4% per thousand feet.

3. Contemporary approved appliances are affected by altitude in differing degrees depending upon their inherent flexibility and reserve capacity in performance at low altitudes.

4. Testing appliances at low altitudes (0-2,000 ft.) at input ratings 5% per thousand ft. of elevation above the input to be used at a given altitude (26% for 5,200 ft.) should insure safe and satisfactory performance at high altitudes (2,000-5,200 ft.). This method of test will accomplish practically the same results as testing in a high altitude chamber requiring large capital investment at about one-half the fee for each test, as well as savings in time and less inconvenience to interested manufacturers. This method may also be employed by manufacturers and others in testing out new designs before submission for approval.

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2. The Effect of Altitude on the Performance of Gas Appliances—F. O. Suffron and O. N. Simmons, A. G. A. Monthly, Sept. 1939.
3. Effect of High Altitude Upon Gas Furnace Operation—J. C. Mueller and L. C. Morris, Pacific Coast Gas Association Proceedings, 1938, page 209.

Wins Production Award Second Time

THE Lattimer-Stevens Company, Columbus, Ohio, peacetime manufacturer of gas meter bars and stopcocks, has received the Army-Navy Production Award for the second time.

Commenting on the award, Robert P. Patterson, Under Secretary of War, said: "You have continued to maintain the high standard which you set for yourselves and which won you distinction more than six months ago. You may well be proud of your achievement."

Officers of the company are: Mrs. Sylvia A. Stevens, president; Charles W. Stevens, vice-president and general manager; Mrs. Minnie Lattimer, treasurer; Henry B. Dugger, secretary.

Niagara Hudson Moves

EXECUTIVE headquarters of the Niagara Hudson System have been transferred from New York to Syracuse, where the system's main offices had been located since June, 1929. Earle J. Macchold, president of Niagara Hudson Power Corporation, parent company, stated that because Syracuse is the approximate geographical center of the system's operations the management believes that these operations can be conducted with greater effectiveness from this city. A statutory and stock transfer office will continue to be maintained in New York City at 15 Broad Street.

Company's Labor Policy

THE Detroit Edison Company published in the August issue of its house organ, "Synchroscope," a memorandum of the Company's basic policy in dealing with its employees.

Personnel Service

POSITIONS OPEN

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